

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF MICHIGAN

_____)	
UNITED STATES OF AMERICA,)	
)	
Plaintiff,)	
)	
v.)	No. 1:11-cv-13330-TLL-CEB
)	
THE DOW CHEMICAL COMPANY,)	
)	
Defendant.)	
_____)	

CONSENT DECREE

TABLE OF CONTENTS

I.	JURISDICTION AND VENUE	3
II.	APPLICABILITY	4
III.	DEFINITIONS	6
IV.	CIVIL PENALTY	12
V.	COMPLIANCE REQUIREMENTS	13
	A. Applicability of the Enhanced LDAR Program.	13
	B. Facility-Wide LDAR Document	13
	C. Monitoring Frequency and Equipment	14
	D. Leak Detection and Repair Action Levels	16
	E. Repairs	18
	F. Delay of Repair	20
	G. Valve and Connector Replacement and Improvement Program	20
	H. Management of Change	28
	I. Training	28
	J. Quality Assurance ("QA")/Quality Control ("QC")	29
	K. LDAR Audits and Corrective Action	30
	L. Certification of Compliance	34
	M. Recordkeeping	34
VI.	REPORTING REQUIREMENTS	35
VII.	LOW GLOSS ABS UNIT	36
VIII.	STIPULATED PENALTIES	41
IX.	FORCE MAJEURE	49
X.	DISPUTE RESOLUTION	52
XI.	INFORMATION COLLECTION AND RETENTION	54
XII.	EFFECT OF SETTLEMENT/RESERVATION OF RIGHTS	56
XIII.	COSTS	57
XIV.	NOTICES	57
XV.	EFFECTIVE DATE	59

XVI. RETENTION OF JURISDICTION	60
XVII. MODIFICATION	60
XVIII. TERMINATION	60
XIX. PUBLIC PARTICIPATION	61
XX. SIGNATORIES/SERVICE	61
XXI. INTEGRATION	62
XXII. FINAL JUDGMENT	63

TABLE OF APPENDICES

Appendix A	Factors to be Considered and Procedures to be Followed to Claim Commercial Unavailability
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CONSENT DECREE

WHEREAS, Plaintiff the United States of America (“United States”), on behalf of the United States Environmental Protection Agency (“EPA”), has filed a complaint against Defendant The Dow Chemical Company (“Dow”) concurrently with the lodging of this Consent Decree;

WHEREAS Dow owns a manufacturing and research site (the “Facility”) known by Dow as “Michigan Operations,” the headquarters of which is located at 1790 Building, Washington Street, Midland, Michigan; at this Facility, various chemicals are manufactured, formulated, or otherwise processed;

WHEREAS, the Complaint alleges that Dow violated Section 112 of the Clean Air Act (“CAA”), 42 U.S.C. § 7412, and the following implementing regulations at the Facility: 40 C.F.R. Part 61, Subpart F (National Emission Standard for Vinyl Chloride); 40 C.F.R. Part 61, Subpart V (National Emission Standard for Equipments Leaks (Fugitive Emission Sources)); 40 C.F.R. Part 61, Subpart FF (National Emission Standard for Benzene Waste Operations); 40 C.F.R. Part 63, Subpart F (the National Emission Standards for Organic Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry); 40 C.F.R. Part 63, Subpart G (the National Emission Standards for Organic Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry for Process Vents, Storage Vessels, Transfer Operations, and Wastewater); 40 C.F.R. Part 63, Subpart H (the National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks); 40 C.F.R. Part 60, Appendix A, Method 21; 40 C.F.R. Part 63, Subpart GGG (the National Emission Standards for Pharmaceuticals Production); 40 C.F.R. Part 63, Subpart JJJ (National Emission Standards for Hazardous Air Pollutant Emissions: Group IV Polymers and Resins); 40 C.F.R. Part 63, Subpart MMM (the National Emission Standards for Hazardous Air Pollutants for Pesticide Active Ingredient Production); and

40 C.F.R. Part 63, Subpart UUUU (the National Emission Standards for Hazardous Air Pollutants for Cellulose Products Manufacturing);

WHEREAS, the Complaint alleges that Dow violated Section 301(a) of the Clean Water Act (“CWA”), 33 U.S.C. § 1311(a);

WHEREAS, the Complaint alleges that Dow violated Section 3005(a) of the Resource Conservation and Recovery Act (“RCRA”), 42 U.S.C. § 6925(a), and the federally-authorized state provisions found at Michigan Administrative Code (“MAC”) Rule 299.9615;

WHEREAS, Dow does not admit any liability to the United States arising out of the transactions or occurrences alleged in the Complaint and nothing in the Complaint, nor in this Consent Decree, nor in the execution and implementation of this Consent Decree shall be treated as an admission of any violation of federal or state statutes or regulations in any litigation or forum whatsoever, except that the terms of this Consent Decree, and Dow’s failure to comply with the terms and conditions thereof may be used by the United States in any action or dispute resolution proceeding to enforce the terms of this Consent Decree or as otherwise permitted by law;

WHEREAS, in the course of the negotiations of this Consent Decree, without any admission of liability or of violation of law, Dow undertook numerous actions to address all of the allegations in the Complaint and the Findings and Notice of Violations (as defined in Paragraph 9.r), including but not limited to performing initial compliance demonstrations for certain condensers; submitting design evaluations for certain condensers and scrubbers; recalculating some emissions estimations; equipping lines with secondary closure devices; monitoring certain connectors that previously had not been monitored; undertaking enhanced training; correcting alleged recordkeeping and reporting errors; submitting a revised National Pollutant Discharge

Elimination System (“NPDES”) permit application; repairing cracks in a secondary containment area; and removing several tanks from hazardous waste service;

WHEREAS, the United States and Dow (“Parties”) recognize, and this Court by entering this Consent Decree finds, that this Consent Decree has been negotiated by the Parties in good faith and will avoid litigation between the Parties, and that this Consent Decree is fair, reasonable, and in the public interest;

NOW, THEREFORE, before the taking of any testimony, without the adjudication or admission of any issue of fact or law except as provided in Section I, and with the consent of the Parties, IT IS HEREBY ADJUDGED, ORDERED, AND DECREED as follows:

I. JURISDICTION AND VENUE

1. This Court has jurisdiction over the subject matter of this action pursuant to 28 U.S.C. §§ 1331, 1345, and 1355; Section 113(b) of the CAA, 42 U.S.C. § 7413(b); Section 309(b) of the CWA, 33 U.S.C. § 1319(b); Section 3008(a)(1) of RCRA, 42 U.S.C. § 6928(a)(1); and over the Parties. Venue lies in this District pursuant to Section 113(b) of the CAA, 42 U.S.C. § 7413(b); Section 309(b) of the CWA, 33 U.S.C. § 1319(b); Section 3008(a)(1) of RCRA, 42 U.S.C. § 6928(a)(1); and 28 U.S.C. §§ 1391(b) and (c) and 1395(a), because Dow resides and is located in this judicial district and the violations alleged in the Complaint are alleged to have occurred in this judicial district. For purposes of this Decree, or any action to enforce this Decree, Dow consents to this Court’s jurisdiction over this Decree, over any action to enforce this Decree, and over Dow. Dow also consents to venue in this judicial district.

2. For purposes of this Consent Decree, Dow does not contest that the Complaint states claims upon which relief may be granted pursuant to Section 112 of the CAA, 42 U.S.C.

§ 7412; Section 301 of the CWA, 33 U.S.C. § 1311; Section 3005(a) of RCRA, 42 U.S.C. § 6925(a); and MAC R 299.9615.

3. Notice of the commencement of this action has been given to the State of Michigan as required by Section 113(b) of the CAA, 42 U.S.C. § 7413(b); Section 309(b) of the CWA, 33 U.S.C. § 1319(b); and Section 3008(a)(2) of RCRA, 42 U.S.C. § 6928(a)(2).

II. APPLICABILITY

4. The obligations of this Consent Decree apply to and are binding upon the United States and upon Dow and any successors, assigns, and other entities or persons otherwise bound by law.

5. No transfer of ownership or operation of any equipment at the Facility that is subject to Leak Detection and Repair (“LDAR”), as defined in Subparagraph 9.t, whether in compliance with the procedures of Paragraphs 5 or 6 or otherwise, shall relieve Dow of its obligations to ensure that the terms of this Consent Decree are implemented unless and until:

a. The transferee agrees in writing to undertake the applicable obligations required by this Consent Decree with respect to equipment at the Facility that is subject to LDAR, and to intervene as a defendant in this action for the purpose of being bound by the applicable terms of this Consent Decree; and

b. The United States, after receiving information sufficient to demonstrate that the transferee has the technical and financial means to comply with the applicable obligations of this Consent Decree, consents in writing to substitute the transferee for Dow with respect to such obligations; and

c. The Court approves such substitution.

6. By no less than 30 days prior to the transfer of the ownership or operation of equipment at the Facility that is subject to LDAR, Dow shall provide a copy of this Consent Decree to the proposed transferee and also shall provide written notice of the prospective transfer, together with a copy of all portions of the proposed written agreement between Dow and the prospective transferee related to environmental compliance, to EPA, the United States Attorney for the Eastern District of Michigan, and the United States Department of Justice, in accordance with Section XIV of this Decree (Notices). Any attempt to transfer ownership or operation of any equipment at the Facility that is subject to LDAR without complying with this Paragraph constitutes a violation of this Decree.

7. Dow shall provide a copy of all relevant portions of this Consent Decree to all officers, employees, and agents whose duties might reasonably include compliance with any provision of this Decree, as well as to any contractor retained to perform work required under this Consent Decree. The foregoing requirement may be satisfied by hard copy, electronic copy, or by providing on-line access with notice to the affected personnel. Dow shall condition any such contract upon performance of the work in conformity with the applicable terms of this Consent Decree.

8. In any action to enforce this Consent Decree, Dow shall not raise as a defense the failure by any of its officers, directors, employees, agents, or contractors to take any actions necessary to comply with the provisions of this Consent Decree. In any action to enforce this Consent Decree at the Low Gloss ABS unit, Dow also shall not raise as a defense its inability to perform any obligations related to that unit based on a limitation in its ownership and/or operational interest in that unit.

III. DEFINITIONS

9. Terms used in this Consent Decree that are defined in the CAA, CWA, and RCRA or in federal and state regulations promulgated pursuant to the CAA, CWA and RCRA shall have the meaning assigned to them in the CAA, CWA and RCRA or such regulations, unless otherwise provided in this Decree. Whenever the terms set forth below are used in this Consent Decree, the following definitions shall apply:

- a. “Annual” or “annually” shall mean a calendar year, except as otherwise provided in applicable LDAR provisions.
- b. “Average” shall mean the arithmetic mean.
- c. “CAP” shall mean the Corrective Action Plan described in Paragraph 50 of this Consent Decree.
- d. “Complaint” shall mean the Complaint filed by the United States in this action.
- e. “Consent Decree” or “Decree” shall mean this Consent Decree and all appendices attached hereto, but in the event of any conflict between the text of this Consent Decree and any Appendix, the text of this Consent Decree shall control.
- f. “Covered Equipment” shall mean all Covered Types of Equipment in all Covered Process Units.
- g. “Covered Process Units” shall mean the unit that produces ETHOCEL™ brand cellulose ethers (identified as EGB5) and the Low Gloss ABS Unit (identified as EG31).
- h. “Covered Types of Equipment” shall mean all valves (except pressure relief valves), connectors, pumps, agitators, and OELs in light liquid or gas/vapor service that are

regulated under any “equipment leak” provisions of 40 CFR Part 61 or 63 or a state or local LDAR program.

i. “Date of Lodging of this Consent Decree” or “Date of Lodging” shall mean the date that the United States files a “Notice of Lodging” of this Consent Decree with the Clerk of this Court for the purpose of providing notice and comment to the public.

j. “Day,” for purposes of requirements uniquely imposed by the ELP and not by any applicable LDAR provisions, shall mean a calendar day. In computing any period of time under this Consent Decree for submittal of reports, where the last day would fall on a Saturday, Sunday, or federal or state holiday, the period shall include the next day that is not a Saturday, Sunday, or federal or state holiday. For all other purposes, “day” shall have the meaning provided in the applicable LDAR provisions.

k. “DOR” shall mean Delay of Repair.

l. “Dow” shall mean The Dow Chemical Company.

m. “Effective Date” shall have the meaning given in Section XV (Effective Date).

n. “Enhanced LDAR Program” or “ELP” shall mean the provisions in this Consent Decree set forth at Paragraphs 13 - 58 of this Decree.

o. “EPA” shall mean the United States Environmental Protection Agency and any of its successor departments or agencies.

p. “Extension,” for purposes of Subparagraphs 9.y.(i)(b) and 9.y.(ii)(b), shall mean that: (i) the tested and untested valves were produced by the same manufacturer to the same or essentially equivalent quality requirements; (ii) the characteristics of the valve that affect sealing performance (*e.g.*, type of valve, stem motion, tolerances, surface finishes, loading

arrangement, and stem and body seal material, design, and construction) are the same or essentially equivalent as between the tested valve and the untested valve; and (iii) the temperature and pressure ratings of the tested valve are at least as high as the temperature and pressure ratings of the untested valve.

q. “Facility” shall mean the contiguous manufacturing and research site known by Dow as “Michigan Operations,” the headquarters of which is located at 1790 Building, Washington Street, Midland, Michigan.

r. “Findings and Notice of Violations” shall mean the following findings and notice of violations issued by EPA Region 5: EPA-5-06-MI-8 (CAA) (June 28, 2006); EPA-5-07-MI-9 (CAA) (June 29, 2007); EPA-5-08-MI-01 (CAA) (November 9, 2007); and RCRA Notice of Violation from Willie H. Harris, EPA, to David Graham, Dow, dated November 9, 2007.

s. “First Maintenance Shutdown” shall mean the first Maintenance Shutdown that occurs no sooner than fifteen months after the Effective Date of this Consent Decree.

t. “LDAR” or “Leak Detection and Repair” shall mean the leak detection and repair activities required by any “equipment leak” provisions of 40 CFR Part 61 or 63. LDAR also shall mean any state or local equipment leak provisions that: (i) require the use of Method 21 to monitor for equipment leaks and also require the repair of leaks discovered through such monitoring; and (ii) are intended to minimize emissions of hazardous air pollutants or other substances identified on the basis of toxicity (*e.g.*, toxic air contaminants).

u. “LDAR Audit Commencement Date” or “Commencement of an LDAR Audit” shall mean the first day of the on-site inspection that accompanies an LDAR audit.

v. “LDAR Audit Completion Date” or “Completion of an LDAR Audit” shall mean the date that is four (4) months after the LDAR Audit Commencement Date.

w. “LDAR Personnel” shall mean all Dow contractors and employees who perform LDAR monitoring, LDAR data input, maintenance of LDAR monitoring devices, leak repairs on equipment subject to LDAR, and/or any other field duties generated by LDAR requirements.

x. “Low-Emissions Packing” or “Low-E Packing” shall mean either (i) or (ii) as follows:

- (i) A valve packing product, independent of any specific valve, for which the manufacturer has issued a written warranty that the packing will not emit fugitives at greater than 100 ppm, and that, if it does so emit at any time in the first five years, the manufacturer will replace the product; provided however, that no packing product shall qualify as “Low-E” by reason of written warranty unless the packing first was tested by the manufacturer or a qualified testing firm pursuant to generally-accepted good engineering practices for testing fugitive emissions and the results of the testing reasonably support the warranty;

or

- (ii) A valve packing product, independent of any specific valve, that has been tested by the manufacturer or a qualified testing firm pursuant to generally-accepted good engineering practices for testing fugitive emissions, and that, during the test, at no time leaked at greater than 500 ppm, and on Average, leaked at less than 100 ppm.

y. “Low-Emissions Valve” or “Low-E Valve” shall mean either (i) or (ii) as follows:

- (i) A valve (including its specific packing assembly) for which the manufacturer has issued a written warranty that it will not emit fugitives at greater than 100 ppm, and that, if it does so emit at any time in the first five years, the manufacturer will replace the valve; provided however, that no valve shall qualify as “Low-E” by reason of written warranty unless the valve (including its specific packing assembly) either:

- (a) first was tested by the manufacturer or a qualified testing firm pursuant to generally-accepted good engineering practices for testing fugitive emissions and the results of the testing reasonably support the warranty; or
- (b) is as an Extension of another valve that qualified as “Low-E” under Subparagraph 9.y.(i)(a);

or

- (ii) A valve (including its specific packing assembly) that:

- (a) Has been tested by the manufacturer or a qualified testing firm pursuant to generally-accepted good engineering practices for testing fugitive emissions and that, during the test, at no time leaked at greater than 500 ppm, and on Average, leaked at less than 100 ppm; or
- (b) Is an Extension of another valve that qualified as “Low-E” under Subparagraph 9.y.(ii)(a).

z. “Maintenance Shutdown” shall mean a shutdown of a Covered Process Unit that either is done for the purpose of scheduled maintenance or lasts longer than 14 calendar days.

aa. “Method 21” shall mean the test method found at 40 C.F.R. Part 60, Appendix A, Method 21. To the extent that the Covered Equipment is subject to regulations that modify Method 21, those modifications shall be applicable. To the extent that insulated valves that are Covered Equipment are subject to an alternative monitoring method approved by EPA on July 24, 2007, that alternative shall be applicable.

bb. “Month” or “monthly” shall mean calendar month, except as otherwise provided in applicable LDAR provisions.

cc. “OEL” or “Open-Ended Line” shall mean any valve, except pressure relief valves, having one side of the valve seat in contact with process fluid and one side open to atmosphere, either directly or through open piping.

dd. “OELCD” shall mean an open-ended valve or line at the closure device.

ee. “Paragraph” shall mean a portion of this Consent Decree identified by an Arabic numeral.

ff. “Parties” shall mean the United States and Dow.

gg. “Quarter” or “quarterly” shall mean a calendar quarter (January through March, April through June, July through September, October through December) except as otherwise provided in applicable LDAR provisions.

hh. “Repair Verification Monitoring” shall mean the utilization of monitoring (or other method that indicates the relative size of the leak) within 24 hours after each attempt at repair of a leaking piece of equipment in order to ensure that the leak has been eliminated or is below the applicable leak definition in this ELP.

ii. “Screening Value” shall mean the highest emission level that is recorded at each piece of equipment as it is monitored in compliance with Method 21.

jj. “Section” shall mean a portion of this Consent Decree that has a heading identified by an upper case Roman numeral.

kk. “Subparagraph” shall mean a portion of a Paragraph of this Consent Decree that is identified by a sequential lower-case letter or by a lower-case Roman numeral.

ll. “Subsection” shall mean a portion of a Section of this Consent Decree that has a heading identified by a capital letter.

mm. “United States” shall mean the United States of America, acting on behalf of EPA.

nn. “Week” or “weekly” shall mean the standard calendar period, except as otherwise provided in applicable LDAR provisions.

IV. CIVIL PENALTY

10. By no later than 30 days after the Effective Date of this Consent Decree, Dow shall pay the sum of Two Million, Five-Hundred Thousand Dollars (\$2,500,000) as a civil penalty. Dow shall pay the civil penalty by FedWire Electronic Funds Transfer ("EFT") to the U.S. Department of Justice in accordance with written instructions to be provided to Dow, following lodging of the Consent Decree, by the Financial Litigation Unit of the U.S. Attorney's Office for the Eastern District of Michigan, 211 W. Fort St, Detroit, MI, 48226. At the time of payment, Dow shall send a copy of the EFT authorization form, the EFT transaction record, and a transmittal letter: (i) to the United States in the manner set forth in Section XIV of this Decree (Notices), (ii) by email to acctsreceivable.CINWD@epa.gov; and (iii) by mail to:

EPA Cincinnati Finance Office
26 Martin Luther King Drive
Cincinnati, Ohio 45268

The transmittal letter shall state that the payment is for the civil penalty owed pursuant to the Consent Decree in United States v. The Dow Chemical Company, and shall reference the civil action number, USAO File Number 2008V00788, and DOJ case number 90-5-2-1-08935.

11. If any portion of the civil penalty due to the United States is not paid when due, Dow shall pay interest on the amount past due, accruing from the Effective Date through the date of payment, at the rate specified in 28 U.S.C. § 1961. Interest payment under this Paragraph shall be in addition to any stipulated penalty due.

12. Dow shall not deduct any penalties paid under this Decree pursuant to this Section or Section VIII (Stipulated Penalties) in calculating its federal income tax.

V. COMPLIANCE REQUIREMENTS

A. Applicability of the Enhanced LDAR Program

13. The requirements of this ELP shall apply to all Covered Equipment and the requirements of Paragraphs 14 and 51 shall apply to all equipment at the Facility that is regulated under LDAR. The requirements of this ELP are in addition to, and not in lieu of, the requirements of any other LDAR regulation that may be applicable to a piece of Covered Equipment. If there is a conflict between an LDAR regulation and this ELP, Dow shall follow the more stringent of the requirements.

B. Facility-Wide LDAR Document

14. By no later than three months after the Effective Date of this Consent Decree, Dow shall develop a facility-wide document that describes: (i) the facility-wide LDAR program (*e.g.*, applicability of regulations to process units and/or specific equipment; leak definitions; monitoring frequencies); (ii) a tracking program (*e.g.*, Management of Change) that ensures that new pieces of equipment added to the Facility for any reason are integrated into the LDAR program and that pieces of equipment that are taken out of service are removed from the LDAR program; (iii) the roles and responsibilities of all employee and contractor personnel assigned to LDAR functions at the Facility; (iv) how the number of personnel dedicated to LDAR functions is sufficient to satisfy the requirements of the LDAR program; and (v) how the Facility plans to implement this ELP. Dow shall review this document on an annual basis and update it as needed by no later than December 31 of each year.

C. Monitoring Frequency and Equipment

15. Beginning no later than six months after the Effective Date, for all Covered Equipment, Dow shall comply with the following periodic monitoring frequencies unless:

(i) more frequent monitoring is required by federal, state, or local laws or regulations; or (ii) the relevant Covered Process Unit has been permanently shut down:

- a. Valves – Quarterly
- b. Connectors – Annually
- c. Pumps/Agitators – Monthly, except that monitoring shall not be required for pumps and agitators that are seal-less or that are equipped with a dual mechanical seal system that complies with the requirements of 40 C.F.R. § 63.163(e)
- d. Open-Ended Lines – Quarterly (monitoring will be done at the closure device; if the closure device is a valve, monitoring will be done in the same manner as any other valve, but also shall include monitoring at the end of the valve or line that is open to the atmosphere)

Compliance with the monitoring frequencies in this Paragraph 15 is not required when a specific, applicable LDAR provision excludes or exempts, fully or partially, monitoring at a periodic frequency (*e.g.*, an exemption for equipment that is designated as unsafe-to-monitor or difficult-to-monitor or an exemption for pumps that have no externally actuated shaft), provided that Dow satisfies all applicable conditions and requirements for the exclusion or exemption set forth in the regulation.

16. Valves and Connectors that Have Been Replaced, Repacked, or Improved pursuant to Subsection G. For valves and connectors that have been replaced, repacked, or improved pursuant to Subsection G (Valve and Connector Replacement and Improvement Program), Dow may elect to monitor any or all such equipment at the most stringent monitoring frequency required by any LDAR regulation that applies to the piece of equipment, rather than the frequency

specified in Paragraph 15 above. If any such piece of equipment is found to have a Screening Value above the leak definitions in Table 1 of Subsection V.D, Dow shall monitor that piece of equipment monthly until the piece of equipment shows no leaks at the leak definition levels in Table 1 of Subsection V.D for twelve consecutive months. At that time, Dow may commence monitoring at the frequency for that type of equipment set forth in either Paragraph 15 or Subparagraph 17.a.

17. Alternative Monitoring Frequencies for Valves, Connectors, and Open-Ended Lines after Two Years. At any time after two consecutive years of monitoring valves, connectors and open-ended lines pursuant to the requirements of Paragraph 15, Dow may elect to comply with the monitoring requirements set forth in this Paragraph 17 by notifying EPA no later than three months prior to changing to the monitoring frequency specified under this Paragraph. Dow may elect to comply with the monitoring requirements of this Paragraph at one or both Covered Process Units but may not make this election for anything less than all pieces of Covered Equipment of the same type (*i.e.*, valves, connectors, or OELs) in one entire Covered Process Unit. An election to comply with the monitoring requirements of Subparagraph 17.a (for valves, connectors, and/or OELs) must include an election to comply with Subparagraph 17.b; Dow may not elect to comply with Subparagraph 17.a without also complying with Subparagraph 17.b.

- a. For Valves, Connectors, and Open-Ended Lines that Have Not Leaked at any Time for at Least Two Consecutive Years of Monitoring. For valves, connectors, and open-ended lines that have not leaked at any time for at least the two years prior to electing this alternative, Dow shall monitor valves and open-ended lines one time per year and shall monitor connectors one time every two years.

If any leaks are detected during this alternative monitoring schedule or during an LDAR audit or a federal, state or local audit or inspection, Dow immediately shall start monitoring the leaking components pursuant to the requirements of Subparagraph 17.b.

- b. For Valves, Connectors, and Open-Ended Lines that Have Leaked at any Time in the Prior Two Years of Monitoring. For valves, connectors, and open-ended lines that have leaked at any time in the prior two years of monitoring, Dow shall monitor each piece of equipment monthly until the piece of equipment shows no leaks for twelve consecutive months, at which time Dow may commence monitoring at the frequency for that type of equipment set forth in Subparagraph 17.a.

18. Beginning no later than six months after the Effective Date, for all Covered Equipment, Dow shall comply with Method 21 in performing LDAR monitoring, using an instrument attached to a data logger (or an equivalent instrument) which directly electronically records the Screening Value detected at each piece of equipment, the date and time that each Screening Value is taken, and the identification numbers of the monitoring instrument and technician. Dow shall transfer this monitoring data to an electronic database on at least a weekly basis for recordkeeping purposes. If, during monitoring in the field, a piece of Covered Equipment is discovered that is not listed in the data logger, Dow is permitted to monitor the piece of Covered Equipment and record, by any means available, the Screening Value, the date and time of the Screening Value, and the identification number of the technician. In such an instance, the failure to initially record the information electronically, in the data logger, does not constitute a violation of this Paragraph's requirement to record the required information electronically, provided that Dow thereafter promptly adds the piece of Covered Equipment and the information regarding the monitoring event to the LDAR database.

D. Leak Detection and Repair Action Levels

19. Action Levels

a. Beginning no later than six months after the Effective Date of this Consent Decree and continuing until termination, for all leaks from Covered Equipment detected at or

above the leak definitions listed in Table 1 for the specific equipment type, Dow shall perform repairs in accordance with Paragraphs 21 – 25.

Table 1: Leak Definitions by Equipment Type

Equipment Type	Lower Leak Definition (ppm)
Valves	250
Connectors	250
Pumps	500
Agitators	1000
Pumps and agitators handling polymerizing monomers	2000
OELs (at the Closure Device)	250

b. For purposes of these lower leak definitions, Dow may elect to adjust or not to adjust the monitoring instrument readings for background pursuant to any provisions of applicable LDAR requirements that address background adjustment, provided that Dow complies with the requirements for doing so or not doing so.

c. The 1000 ppm leak definition for agitators set forth in Table 1 does not apply to the two agitators identified in Dow's Equipment Maintenance Tracking System with the numbers 760587 and 760594 and located in the Covered Process Unit that produces ETHOCEL™ brand cellulose ethers. Instead, the regulatory leak definition of 10,000 ppm applies to these agitators.

d. The 2000 ppm leak definition for pumps handling polymerizing monomers set forth in Table 1 does not apply to the Sierbath grinder pump located in the Low Gloss ABS Covered Process Unit and identified as P2001. Instead, the regulatory leak definition of 5000 ppm applies to the Sierbath grinder pump.

20. Beginning no later than six months after the Effective Date of this Consent Decree, for all Covered Equipment and all valves, pumps, agitators, and OELs in heavy liquid service, at

any time, including outside of periodic monitoring, that evidence of a potential leak is detected through audio, visual, or olfactory sensing, Dow shall comply with all applicable regulations and, if repair is required, with Paragraphs 21 – 25.

E. Repairs

21. Except as provided in Subparagraphs 32.d.i and 38.c.i, by no later than 5 days after detecting a leak, Dow shall perform a first attempt at repair. By no later than 15 days after detection, Dow shall perform a final attempt at repair or may place the piece of equipment on the Delay of Repair list provided that Dow has complied with all applicable regulations and with the requirements of Paragraphs 22 - 25 and 27.

22. Except as provided in Subparagraphs 32.d.i and 38.c.i, Dow shall perform Repair Verification Monitoring.

23. Repair Attempt for Valves (other than Control Valves) with Screening Values greater than or equal to 100 ppm but less than 250 ppm. For any valve, excluding control valves, that has a Screening Value greater than or equal to 100 ppm but less than 250 ppm, Dow shall make an initial attempt to repair the valve and eliminate the leak by no later than 5 days after detecting the leak. Repair Verification Monitoring shall be performed to determine if the repair has been successful. If, upon Repair Verification Monitoring, the Screening Value is less than 250 ppm, no further actions shall be required for that monitoring event for that valve. If, upon Repair Verification Monitoring, the Screening Value is greater than or equal to 250 ppm, Dow shall undertake the requirements for repair required by this Consent Decree (and all deadlines for such requirements shall be based on the date of the failed Repair Verification Monitoring), but Dow shall not be required to replace or repack the valve pursuant to Subsection G.

24. Drill and Tap for Valves (other than Control Valves)

a. Except as provided in Subparagraph 24.b, for leaking valves (other than control valves), when other repair attempts have failed to reduce emissions below the applicable leak definition and Dow is not able to remove the leaking valve from service, Dow shall attempt at least one drill-and-tap repair (with a second injection of an appropriate sealing material if the first injection is unsuccessful at repairing the leak) before placing the valve (other than provisionally, as set forth in Subparagraph 24.c) on the DOR list.

b. Drill-and-tap is not required: (i) when Subparagraph 32.d.i applies; or (ii) when there is a major safety, mechanical, product quality, or environmental issue with repairing the valve using the drill-and-tap method, in which case, Dow shall document the reason(s) why any drill-and-tap attempt was not performed prior to placing any valve on the DOR list.

c. If a drill-and-tap attempt can reasonably be completed within the fifteen-day repair period, Dow shall complete the drill-and-tap attempt in that time period. If a drill-and-tap attempt cannot reasonably occur within the fifteen-day repair period (*e.g.*, if Dow's drill-and-tap contractor is not local and must mobilize to the Facility), Dow provisionally may place the valve on the DOR list pending attempting the drill-and-tap repair as expeditiously as practical. In no event (other than as provided in Subparagraph 24.b) may Dow take more than 30 days from the initial monitoring to attempt a drill-and-tap repair. If drill-and-tap is successful, the valve shall be removed from the provisional DOR list.

25. Except as provided in Subparagraphs 32.d.i and 38.c.i, for each leak, Dow shall record the following information: the date of all repair attempts; the repair methods used during each repair attempt; the date, time and Screening Values for all re-monitoring events; and, if

applicable, documentation of compliance with Paragraphs 24 and 27 for Covered Equipment placed on the DOR list.

26. Nothing in Paragraphs 21 - 25 is intended to prevent Dow from taking a leaking piece of Covered Equipment out of service; provided however, that prior to placing the leaking piece of Covered Equipment back in service, Dow must repair the leak or must comply with the requirements of Subsection F (Delay of Repair) to place the piece of Covered Equipment on the DOR list.

F. Delay of Repair

27. Beginning no later than the Effective Date of this Consent Decree for the requirements in Subparagraphs 27.b and 27.c.(i), and beginning no later than three months after the Effective Date of this Consent Decree for the other requirements set forth below in this Paragraph, for all Covered Equipment placed on the DOR list, Dow shall:

- a. Require sign-off from the relevant process unit supervisor or person of similar authority that the piece of Covered Equipment is technically infeasible to repair without a process unit shutdown;
- b. Undertake periodic monitoring of the Covered Equipment placed on the DOR list at the frequency required for other pieces of Covered Equipment of that type in the process unit; and
- c. (i) Repair the piece of Covered Equipment within the time frame required by the applicable LDAR regulation; or, (ii) if applicable under Subsection G, replace, repack, or improve, the piece of Covered Equipment by the timeframes set forth in Subsection G.

G. Valve and Connector Replacement and Improvement Program

28. Commencing no later than six months after the Effective Date of this Consent Decree, and continuing until termination, Dow shall implement the program set forth in Paragraphs 29 - 40 to improve the emissions performance of the valves and connectors that are

Covered Equipment in each Covered Process Unit. All references to “valves” in Paragraphs 29 - 35 exclude pressure relief valves.

29. List of all Existing Valves in the Covered Process Units. In the first compliance status report required under Section VI and due at least six months after the Effective Date of this Consent Decree, Dow shall include a list of the tag numbers of all valves subject to this ELP, broken down by Covered Process Unit, that are in existence as of the Effective Date. The valves on this list shall be the “Existing Valves” for purposes of Paragraphs 30 - 32.

30. Proactive Initial Valve Tightening Work Practices Relating to each New Valve that Is Installed and each Existing Valve that Is Repacked. Dow shall undertake the following work practices with respect to each new valve that is subject to LDAR that is installed (whether the new valve replaces an Existing Valve or is newly added to a Covered Process Unit) and each Existing Valve that is repacked:

- a. Upon installation (or re-installation in the case of repacking), Dow shall tighten the valve’s packing gland nuts or their equivalent (*e.g.*, pushers) to:
 - (i) the manufacturer’s recommended gland nut or packing torque; or
 - (ii) any appropriate tightness that will minimize the potential for fugitive emission leaks of any magnitude. This practice shall be implemented prior to the valve’s exposure (or re-exposure, in the case of repacking) to process fluids.
- b. Not less than three days nor more than two weeks after a new valve that has been installed or an Existing Valve that has been repacked first is exposed to process fluids at operating conditions, Dow shall recheck the load on the valve packing and, if necessary, shall tighten the packing gland nuts or their equivalent (*e.g.*, pushers) to: (i) the manufacturer’s recommended gland nut or packing torque; or (ii) any appropriate tightness that will minimize the potential for fugitive emission leaks of any magnitude.

31. Installing New Valves. Except as provided in Subparagraphs 31.a, 31.b, or Paragraph 34, Dow shall ensure that each new valve (other than a valve that serves as the closure device on an open-ended line) that it installs in each Covered Process Unit and that, when installed,

will be regulated under LDAR, either is a Low-E Valve or is fitted with Low-E Packing. This requirement applies to entirely new valves that are added to a Covered Process Unit and to Existing Valves that are replaced for any reason in a Covered Process Unit.

a. Paragraph 31 shall not apply in emergencies or exigent circumstances requiring immediate installation or replacement of a valve where a Low-E Valve or Low-E Packing is not available on a timely basis. Any such instance shall be reported in the next ELP compliance status report.

b. Paragraph 31 shall not apply to valves that are installed temporarily for a short-term purpose and then removed (*e.g.*, valves connecting a portion of the Covered Process Unit to a testing device.)

32. Replacing or Repacking Existing Valves that Have Screening Values at or above 250 ppm with Low-E Valves or Low-E Packing.

a. Existing Valves Required to Be Replaced or Repacked. Except as provided in Paragraph 34, for each Existing Valve that has a Screening Value at or above 250 ppm during any monitoring event, Dow shall either replace or repack the Existing Valve with a Low-E Valve or Low-E Packing.

b. Timing: If Replacing or Repacking Does Not Require a Process Unit Shutdown. If replacing or repacking does not require a process unit shutdown, Dow shall replace or repack the Existing Valve by no later than one month after the monitoring event that triggers the replacing or repacking requirement, unless Dow complies with the following:

- i. Prior to the deadline, Dow must take all actions necessary to obtain the required valve or valve packing, including all necessary associated materials, as expeditiously as practical, and retain documentation of the actions taken and the date of each such action;

- ii. If, despite Dow's efforts to comply with Subparagraph 32.b.i, the required valve or valve packing, including all necessary associated materials, is not available in time to complete the installation within one month, Dow must take all reasonable actions to minimize emissions from the valve pending completion of the required replacing or repacking. Examples include:
 - (a) Repair;
 - (b) More frequent monitoring, with additional repairs as needed; or
 - (c) Where practical, interim replacing or repacking of a valve with a valve that is not a Low-E Valve or with packing that is not Low-E Packing; and
- iii. Dow must promptly perform the required replacing or repacking after Dow's receipt of the valve or valve packing, including all necessary associated materials.

c. Timing: If Replacing or Repacking Requires a Process Unit Shutdown.

If replacing or repacking requires a process unit shutdown, Dow shall replace or repack the Existing Valve during the first Maintenance Shutdown that follows the monitoring event that triggers the requirement to replace or repack the valve, unless Dow documents that insufficient time existed between the monitoring event and that Maintenance Shutdown to enable Dow to purchase and install the required valve or valve packing technology. In that case, Dow shall undertake the replacing or repacking at the next Maintenance Shutdown that occurs after Dow's receipt of the valve or valve packing, including all necessary associated materials.

d. Actions Required Pending Replacings or Repackings Pursuant to

Subparagraphs 32.a - c.

- i. Actions Required Pursuant to Subsection E. Dow shall not be required to comply with Subsection E pending replacing or repacking pursuant to Subparagraphs 32.a - c if Dow completes the replacing or repacking by the date that is no later than one month after detecting the leak. If Dow does not complete the replacing or repacking within one month, or if, at the time of the leak detection,

Dow reasonably can anticipate that it might not be able to complete the replacing or repacking within one month, Dow shall comply with all applicable requirements of Subsection E.

- ii. Actions Required Pursuant to Applicable Regulations. For each Existing Valve that has a Screening Value at or above 500 ppm, Dow shall comply with all applicable regulatory requirements, including repair and “delay of repair,” pending replacing or repacking pursuant to Subparagraphs 32.a - c.

33. Provisions Related to Low-E Valves and Low-E Packing.

a. “Low-E” Status Not Affected by Subsequent Leaks. If, during monitoring after installation, a Low-E Valve or a valve using Low-E Packing has a Screening Value at or above 250 ppm, the leak is not a violation of this Decree, does not invalidate the “Low-E” status or use of that type of valve or packing technology, and does not require replacing other, non-leaking valves or packing technology of the same type.

b. Repairing Low-E Valves. If, during monitoring after installation, a Low-E Valve or a valve using Low-E Packing has a Screening Value at or above 250 ppm, Paragraphs 21, 22, 24, 25, 26 and 27 shall apply.

c. Replacing or Repacking Low-E Valves. On any occasion when a Low-E Valve or a valve that utilizes Low-E Packing has a Screening Value at or above 250 ppm but below 500 ppm, Dow shall not be required to replace or repack it. On any occasion when a Low-E Valve or a valve that utilizes Low-E Packing has a Screening Value at or above 500 ppm, Dow shall replace or repack it pursuant to the requirements of Paragraph 32.

34. Commercial Unavailability of a Low-E Valve or Low-E Packing. Dow shall not be required to utilize a Low-E Valve or Low-E Packing to replace or repack a valve if a Low-E Valve or Low-E Packing is commercially unavailable. The factors relevant to the question of

commercial unavailability and the procedures that Dow must follow to assert that a Low-E Valve or Low-E Packing is commercially unavailable are set forth in Appendix A.

35. Records of Low-E Valves and Low-E Packing. Prior to installing any Low-E Valves or Low-E Packing, or if not possible before installation, then as soon as possible after installation, Dow shall secure from each manufacturer documentation that demonstrates that the proposed valve or packing technology meets the definition of “Low-E Valve” and/or “Low-E Packing.” Dow shall make the documentation available upon request.

36. Connector Replacement and Improvement Descriptions.

a. For purposes of Paragraphs 37 - 38, for each of the following types of connectors, the following type of replacement or improvement shall apply:

<u>Connector Type</u>	<u>Replacement or Improvement Description</u>
Flanged	Gasket replacement or gasket improvement
Threaded	Replacement of the connector with a like kind connector or other
Compression	Replacement of the connector with a like kind connector or other
CamLock	Replacement or improvement of the gasket or replacement or improvement of the CamLock
Quick Connect	Replacement or improvement of the gasket if applicable, or replacement of the connector (with either a like kind connector or other) if there is no gasket
Any type (including any of the above)	Elimination (<i>e.g.</i> , through welding, pipe replacement, etc.)

b. In cases where replacement-in-kind is utilized as the method for replacing or improving a connector (*e.g.*, a Quick Connect replaces another Quick Connect), the provisions of Subparagraphs 36.b.i and 36.b.ii shall apply.

- i. If there are types, models or styles of a like-kind connector that are less likely to leak than the existing connector, and one or more of those types, models or styles are technically feasible to use (considering the service, operating conditions, and type of piping or tubing that the connector is in) and would not create a major safety, mechanical, product quality, regulatory or other issue, Dow shall select a like-kind connector from among such types, models or styles.
- ii. If Subparagraph 36.b.i does not apply, Dow may install a like-kind connector that is the same type, model or style as the existing connector.

37. Installing New Connectors. For each Covered Process Unit, Dow shall use best efforts, when selecting a new connector that, when installed, will be regulated under LDAR, to select a connector that is least likely to leak, using good engineering judgment, for the service, operating conditions, and type of piping or tubing that the connector is in. This requirement applies to entirely new connectors added to a Covered Process Unit and to existing connectors that are replaced for whatever reason within a Covered Process Unit.

38. Replacing or Improving Connectors.

a. Trigger for Replacement or Improvement Requirements. For each connector that, in any two of three consecutive monitoring periods, has a Screening Value at or above 250 ppm, Dow shall replace or improve the connector in accordance with the applicable replacement or improvement described in Paragraph 36. Dow shall use best efforts to install a replacement or improvement that will be the least likely to leak, using good engineering judgment, for the service, operating conditions, and type of piping or tubing that the connector is in.

b. Timing. If the replacement or improvement does not require a process unit shutdown, Dow shall undertake the replacement or improvement by no later than one month after the monitoring event that triggers the replacement or improvement requirement. If the replacement or improvement requires a process unit shutdown, Dow shall undertake the replacement or improvement during the first Maintenance Shutdown that follows the monitoring event that triggers the requirement to replace or improve the connector, unless Dow documents that insufficient time existed between the monitoring event and the Maintenance Shutdown to enable Dow to secure and install the replacement or improvement. In that case, Dow shall undertake the replacement or improvement at the next Maintenance Shutdown that occurs after Dow's receipt of the necessary materials.

c. Actions Required Pending Replacements or Improvements Pursuant to Subparagraphs 38.a - b.

- i. Actions Required Pursuant to Subsection E. Dow shall not be required to comply with Subsection E pending replacement or improvement pursuant to Subparagraphs 38.a - b if Dow completes the replacement or improvement by the date that is no later than one month after detecting the leak. If Dow does not complete the replacement or improvement within one month, or if, at the time of the leak detection, Dow reasonably can anticipate that it might not be able to complete the replacement or improvement within one month, Dow shall comply with all applicable requirements of Subsection E.
- ii. Actions Required Pursuant to Applicable Regulations. For each connector that has a Screening Value at or above 500 ppm, Dow shall comply with all applicable regulatory requirements, including repair and "delay of repair," pending replacement or improvement pursuant to Subparagraphs 38.a - b.

39. Nothing in Paragraphs 30 - 38 requires Dow to utilize any valve, valve packing technology, or connector that is not appropriate for its intended use in a Covered Process Unit.

40. In each Compliance Status Report due under Section VI (Reporting Requirements) of this Decree, Dow shall include a separate section in the Report that: (i) describes the actions it took to comply with this Subsection G, including identifying each piece of equipment that triggered a requirement in Subsection G, the Screening Value for that piece of equipment, the type of action taken (*i.e.*, replacement, repacking, or improvement), and the date when the action was taken; (ii) identifies any required actions that were not taken and explains why; and (iii) identifies the schedule for any known, future replacements, repackings, improvements, or eliminations.

H. Management of Change

41. Management of Change. To the extent not already done, beginning no later than three months after the Effective Date of this Consent Decree, Dow shall ensure that each valve, connector, pump, agitator, and OEL added to the Covered Process Units for any reason is evaluated to determine if it is subject to LDAR requirements. Dow also shall ensure that each valve, connector, pump, agitator, and OEL that was subject to the LDAR program is eliminated from the LDAR program if it is physically removed from a Covered Process Unit. This evaluation shall be a part of Dow's Management of Change protocol.

I. Training

42. By no later than nine months after the Effective Date of this Consent Decree, Dow shall develop a training protocol (or, as applicable, require its contractor to develop a training protocol for the contractor's employees) and shall ensure that all LDAR Personnel have completed training on all aspects of LDAR, including this ELP, that are relevant to the person's duties. Once per calendar year starting in the calendar year after completion of initial training, Dow shall ensure that refresher training is performed with respect to each employee or contractor; provided however, that refresher training is not required if an individual's employment at the Facility ceases

prior to the end of the calendar year or no longer involves duties relevant to LDAR. Beginning no later than the Effective Date of this Consent Decree and continuing until termination, Dow shall ensure (or as applicable, require its contractor to ensure for the contractor's employees) that new LDAR Personnel are sufficiently trained prior to any field involvement (other than supervised involvement for purposes of training) in the LDAR program.

J. Quality Assurance ("QA")/Quality Control ("QC")

43. Daily Certification by Monitoring Technicians. Commencing by no later than one month after the Effective Date of this Consent Decree, on each day that monitoring occurs, at the end of such monitoring, Dow shall ensure that each monitoring technician certifies that the data collected accurately represents the monitoring performed for that day by requiring the monitoring technician to sign a form that includes the following certification:

On [insert date], I reviewed the monitoring data that I collected today and to the best of my knowledge and belief, the data accurately represent the monitoring that I performed today.

44. Commencing by no later than the first full calendar quarter after the Effective Date of this Consent Decree, at times that are not announced to the LDAR monitoring technicians, an LDAR-trained employee or contractor of Dow, who does not serve on a routine basis as an LDAR monitoring technician at the Facility, shall undertake the following no less than once per calendar quarter:

- a. Verify that equipment was monitored at the appropriate frequency;
- b. Verify that proper documentation and sign-offs have been recorded for all equipment placed on the DOR list;
- c. Ensure that repairs have been performed in the required periods;
- d. Review monitoring data and equipment counts (*e.g.*, number of pieces of equipment monitored per day) for feasibility and unusual trends

- e. Verify that proper calibration records and monitoring instrument maintenance information are maintained;
- f. Verify that other LDAR program records are maintained as required; and
- g. Observe in the field each LDAR monitoring technician who is conducting leak detection monitoring to ensure that monitoring during the quarterly QA/QC is being conducted as required.

Dow promptly shall correct any deficiencies detected or observed. Dow shall maintain a log that:

(i) records the date and time that the reviews, verifications, and observations required by this

Paragraph are undertaken; and (ii) describes the nature and timing of any corrective actions taken.

K. LDAR Audits and Corrective Action

45. LDAR Audit Schedule. Until termination of this Decree, Dow shall ensure that an LDAR audit of both Covered Process Units at the Facility is conducted annually in accordance with the following schedule: for the first LDAR audit, the LDAR Audit Commencement Date shall be no later than three months after the Effective Date of this Consent Decree; for each subsequent LDAR audit, the LDAR Audit Completion Date shall occur within the same calendar quarter (of the subsequent year) that the first LDAR Audit Completion Date occurred.

46. Requirements related to persons conducting LDAR audits. For the first, third and fifth LDAR audits conducted under this Consent Decree, Dow shall retain and utilize a third party with experience in conducting LDAR audits. Dow shall select a different company than the Facility's regular LDAR contractor to perform the third-party audit and Dow may not hire that company as the Facility's regular LDAR contractor during the life of this Consent Decree. The second and fourth audits may be either third-party audits or audits using (alone or in combination with third-party personnel) personnel of Dow's subsidiaries from other facilities or from centralized Dow (and/or subsidiary) functions that do not primarily serve the Facility. All such internal audits must be conducted by personnel familiar with LDAR requirements and this ELP.

47. For each Covered Process Unit, each LDAR audit shall include: (i) reviewing compliance with all applicable LDAR regulations, including LDAR requirements related to valves, connectors, pumps, agitators and OELs in heavy liquid service; (ii) reviewing and/or verifying, as applicable, the same items that are required to be reviewed and/or verified in Subparagraphs 44.a – 44.f; (iii) reviewing whether any pieces of equipment that are required to be in the LDAR program are not included; and (iv) “comparative monitoring” as described in Paragraph 48. LDAR audits after the first audit also shall include reviewing the Facility’s compliance with this ELP.

48. Comparative Monitoring. Comparative monitoring during LDAR audits shall be undertaken as follows:

- a. Calculating a Comparative Monitoring Audit Leak Percentage. Covered Equipment shall be monitored in order to calculate a leak percentage for each Covered Process Unit, broken down by equipment type (*i.e.*, valves, pumps, agitators, connectors, and OELCDs). For descriptive purposes under this Section, the monitoring that takes place during the audit shall be called “comparative monitoring” and the leak percentages derived from the comparative monitoring shall be called the “Comparative Monitoring Audit Leak Percentages.” Dow shall undertake comparative monitoring at both Covered Process Units in each audit. In undertaking Comparative Monitoring, Dow shall not be required to monitor every component in each Covered Process Unit.
- b. Calculating the Historic, Average Leak Percentage from Prior Periodic Monitoring Events. For each Covered Process Unit, the historic, Average leak percentage from prior periodic monitoring events, broken down by equipment type (*i.e.*, valves (excluding pressure relief valves), pumps, agitators, connectors, and except as provided in Subparagraph 48.d below, OELCDs) shall be calculated. The following number of complete monitoring periods immediately preceding the comparative monitoring shall be used for this purpose: valves - 4 periods; pumps and agitators - 12 periods; connectors – 2 periods; and except as provided in Subparagraph 48.d below, OELCDs - 4 periods.
- c. Calculating the Comparative Monitoring Leak Ratio. For each Covered Process Unit and each Covered Type of Equipment, the ratio of the Comparative Monitoring Audit Leak Percentage from Subparagraph 48.a to

the historic, Average leak percentage from Subparagraph 48.b shall be calculated. This ratio shall be called the “Comparative Monitoring Leak Ratio.” If the denominator in this calculation is “zero,” it shall be assumed (for purposes of this calculation but not for any other purpose under this Consent Decree or under any applicable laws and regulations) that one leaking piece of equipment was found in the process unit through routine monitoring during the 12-month period before the comparative monitoring.

- d. In only the first LDAR audit, Dow shall not be required to undertake comparative monitoring on OELCDs or calculate a Comparative Monitoring Leak Ratio for OELCDs because of the unavailability of historic, Average leak percentages for OELCDs.

49. When More Frequent Periodic Monitoring is Required. If a Comparative Monitoring Audit Leak Percentage calculated pursuant to Subparagraph 48.a triggers a more frequent monitoring schedule under any applicable federal, state, or local law or regulation than the frequencies listed in the applicable Paragraph in Subsection V.C – that is, either Paragraph 15, 16, or 17 -- for the equipment type in that Covered Process Unit, Dow shall monitor the affected type of equipment at the greater frequency unless and until less frequent monitoring is again allowed under the specific federal, state, or local law or regulation. At no time may Dow monitor at intervals less frequently than those listed in the applicable Paragraph in Subsection V.C.

50. Corrective Action Plan (“CAP”).

a. Requirements of a CAP. By no later than the date that is one month after each LDAR Audit Completion Date, Dow shall develop a preliminary Corrective Action Plan if: (i) the results of an LDAR audit identify any deficiencies; or (ii) a Comparative Monitoring Leak Ratio calculated pursuant to Subparagraph 48.c is 3.0 or higher *and* the Comparative Monitoring Audit Leak Percentage calculated pursuant to Subparagraph 48.a is greater than or equal to 0.5 percent. The preliminary CAP shall describe the actions that Dow has taken or shall take to address: (i) the deficiencies and/or (ii) the causes of a Comparative Monitoring Leak Ratio that is 3.0 or higher (but only if the Comparative Monitoring Audit Leak Percentage is at or above 0.5

percent). Dow shall include a schedule by which actions that have not yet been completed shall be completed. Dow promptly shall complete each corrective action item with the goal of completing each action within the date that is three months after the LDAR Audit Completion Date. If any action is not completed or not expected to be completed within three months after the LDAR Audit Completion Date, Dow shall explain the reasons and propose a schedule for prompt completion in the final CAP to be submitted under Subparagraph 50.b.

b. Submission of the Final CAP to EPA. By no later than the date that is four months after the LDAR Audit Completion Date, Dow shall submit the final CAP to EPA, together with a certification of the completion of each item of corrective action. If any action is not completed within three months after the LDAR Audit Completion Date, Dow shall explain the reasons, together with a proposed schedule for prompt completion. Dow shall submit a supplemental certification of completion by no later than one month after completing all actions.

c. EPA Comment on CAP. EPA may submit comments on the CAP. Except for good cause, EPA may not request Dow to modify any action within the CAP that already has been completed or is in progress at the time of EPA's comments. Within the date that is one month after receipt of any comments from EPA, Dow shall submit a reply. Disputes arising with respect to any aspect of a CAP shall be resolved in accordance with the dispute resolution provisions of this Decree.

d. Extension of Completion Dates. Because Dow asserts that its general practice is to establish aggressive schedules for undertaking steps to correct potential areas of non-compliance with environmental regulations, and because the Parties do not wish to discourage this practice, for any corrective action item for which Dow must propose a schedule for completion in the final CAP submitted to EPA, Dow may later request an extension of time from EPA if Dow

demonstrates that an unanticipated problem(s) prevented completion according to the originally-proposed schedule and Dow notifies EPA of this problem(s) promptly upon its discovery. In its discretion, EPA may grant the extension.

L. Certification of Compliance

51. Within 180 days after the initial LDAR Audit Completion Date, Dow shall certify to EPA that, to the signer's best knowledge and belief formed after reasonable inquiry: (i) except as otherwise identified, the Facility, including the Low Gloss ABS unit, is in compliance with all applicable LDAR regulations and this ELP; (ii) Dow has completed all corrective actions, if applicable, or is in the process of completing all corrective actions pursuant to a CAP; and (iii) all equipment at the Facility, including the Low Gloss ABS unit, that is regulated under LDAR has been identified and included in the Facility's LDAR program. To the extent that Dow cannot make the certification in all respects, it shall specifically identify any deviations from Items (i) - (iii).

M. Recordkeeping

52. Dow shall keep all records required by this ELP, including each LDAR audit report, to document compliance with the requirements of this ELP for at least one year after termination of this Consent Decree. Upon request by EPA, Dow shall make all such documents available to EPA and shall provide, in electronic format if so requested, all LDAR monitoring data generated during the life of this Consent Decree.

VI. REPORTING REQUIREMENTS

53. ELP Compliance Status Reports. On the dates and for the time periods set forth in Paragraph 54, Dow shall submit to EPA, in the manner set forth in Section XIV (Notices), the following information:

- a. The number of LDAR Personnel at the Facility (excluding Personnel whose functions involve the non-monitoring aspects of repairing leaks) and the approximate percentage of time each such person dedicated to performing his/her LDAR functions;
- b. An identification and description of any non-compliance with the requirements of Section V (Compliance Requirements);
- c. An identification of any problems encountered in complying with the requirements of Section V (Compliance Requirements);
- d. The information required by Paragraph 40 of Subsection V.G;
- e. A description of the trainings done in accordance with this Consent Decree;
- f. Any deviations identified in the QA/QC performed under Subsection V.J, as well as any corrective actions taken under that Subsection;
- g. A summary of LDAR audit results including specifically identifying all alleged deficiencies; and
- h. The status of all actions under any CAP that was submitted during the reporting period, unless the CAP was submitted less than one month before the compliance status report.

54. Due Dates. The first compliance status report shall be due thirty-one days after the first full half-year after the Effective Date of this Consent Decree (*i.e.*, either: (i) January 31 of the year after the Effective Date, if the Effective Date is between January 1 and June 30 of the preceding year; or (ii) July 31 of the year after the Effective Date, if the Effective Date is between July 1 and December 31). The initial report shall cover the period between the Effective Date and the first full half year after the Effective Date (a “half year” runs between January 1 and June 30 and between July 1 and December 31). Until termination of this Decree, each subsequent report

will be due on the same date in the following year and shall cover the prior two half years (*i.e.*, either January 1 to December 31 or July 1 to June 30).

55. Each report submitted under this Consent Decree shall be signed by the Michigan Operations site leader or the Michigan Operations responsible care leader (head of those responsible for environmental management and compliance), and shall include the following certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

56. All Reports under this Consent Decree shall be submitted to EPA in the manner designated in Section XIV of this Consent Decree (Notices).

57. The reporting requirements of this Consent Decree do not relieve Dow of any reporting obligations required by the CAA, CWA or RCRA or implementing regulations, or by any other federal, state, or local law, regulation, permit, or other requirement. The reporting requirements of this Section are in addition to any other reports, plans or submissions required by other Sections of this Consent Decree.

58. Any information provided pursuant to this Consent Decree may be used by the United States in any proceeding to enforce the provisions of this Consent Decree and as otherwise permitted by law.

VII. LOW GLOSS ABS UNIT

59. WHEREAS:

a. Styron LLC ("Styron") was formed as a wholly owned subsidiary of Dow on November 10, 2009. The formation of Styron was unrelated to and independent of this action.

It occurred after the issuance of the 2006-2007 Findings and Notice of Violations that form the basis for the settlement embodied in this Consent Decree. On April 1, 2010, Dow transferred certain assets, including the Low Gloss ABS Unit building and most of the process equipment contained therein, to Styron. At that same time, Dow leased to Styron the land where the Low Gloss ABS Unit is housed. On June 17, 2010, Dow sold Styron to Styron's current owner. Styron operates the process equipment at the Low Gloss ABS Unit; however, through contractual arrangements with Dow, Dow performs all monitoring, repair, training, and other services relating to LDAR and provides all associated Environment, Health, & Safety consulting services.

b. Styron wishes to cooperate with the United States and Dow with respect to the implementation of the Enhanced LDAR Program at the Low Gloss ABS Unit.

c. The United States acknowledges that Styron is not liable for the allegations asserted in the Complaint in this action or in the Findings and Notice of Violations, all of which pre-date Styron's creation.

d. Styron denies any and all responsibility for the violations alleged in the Complaint and in the Findings and Notice of Violations. Styron's agreement to undertake the obligations in this Section of the Decree should not be construed as an admission of liability or a waiver of any of its rights whatsoever.

60. Obligations

a. By consenting to Section VII of this Consent Decree, Styron certifies that it has read all of the provisions of this Consent Decree.

b. For the shorter of: (i) Styron's ownership and/or operational interest in the Low Gloss ABS unit; or (ii) the duration of this Consent Decree, Styron shall cooperate fully with

Dow, including but not limited to providing documents, information, access, and/or data, to enable Dow to perform the Enhanced LDAR Program at the Low Gloss ABS Unit.

c. Dow's Failure to Substantially Perform the ELP at the Low Gloss ABS Unit

i. For purposes of Subparagraphs 60.c and 60.d, the phrases "Failure to Substantially Perform the ELP at the Low Gloss ABS Unit" and "Fail to Substantially Perform the ELP at the Low Gloss ABS Unit," shall mean that Dow fails to substantially perform, at the Low Gloss ABS Unit, the obligations of Paragraphs 13 – 58 of this Decree, taking those obligations as a whole. The failure to perform individual obligations, even numerous individual obligations, is not a Failure to Substantially Perform the ELP at the Low Gloss ABS Unit, unless, taken as a whole, Dow fails to substantially perform the entire Enhanced LDAR Program at the Low Gloss ABS Unit. For failures that are less than a Failure to Substantially Perform the ELP at the Low Gloss ABS Unit, the stipulated penalty provisions against Dow in Paragraph 63 of this Decree and any other remedies available to the United States against Dow shall apply.

ii. The United States shall notify Dow if, in the judgment of the United States, Dow Fails to Substantially Perform the ELP at the Low Gloss ABS Unit ("Initial Notice"). The United States shall provide a copy of this Initial Notice to Styron. Dow shall have a reasonable opportunity to cure. If, within a reasonable period of time not to exceed 90 days from the date of the Initial Notice, Dow cures its Failure to Substantially Perform the ELP at the Low Gloss ABS Unit, then Dow shall continue to be responsible for compliance with the ELP at the Low Gloss ABS Unit. If, in the judgment of the United States, Dow does not cure its Failure to Substantially Perform the ELP at the Low Gloss ABS Unit within a reasonable period of time not to exceed 90 days, then the United States shall so notify Dow ("Final Notice"). The United States shall provide a copy of this Final Notice to Styron. Upon receipt of the Final Notice, Dow no

longer shall be responsible for complying with the ELP at the Low Gloss ABS Unit unless and until Dow recommences performance of the ELP at the Low Gloss ABS Unit either by consent of the United States or by Court order. Disputes arising under this provision shall be resolved pursuant to the dispute resolution provisions of this Decree.

d. Styron's Contingent Obligations

i. As soon as practicable after receipt of the Final Notice described in Subparagraph 60.c.ii, Styron shall commence performance of the ELP at the Low Gloss ABS Unit. It is expressly recognized that, as to the obligation to commence performance "as soon as practicable," Styron likely will be able to commence performance of some obligations sooner than others and that each obligation must be considered separately.

ii. If Styron seeks to dispute whether Dow has Failed to Substantially Perform the ELP at the Low Gloss ABS Unit, Styron shall invoke the dispute resolution provisions of Section X of this Decree by no later than 60 days after receipt of the Final Notice.

Notwithstanding the invocation of these provisions, Styron shall be required to commence, if not yet commenced, and/or continue its performance of the ELP at the Low Gloss ABS Unit pursuant to the requirements of Subparagraph 60.d.i. Styron's performance shall cease only if and when Dow recommences performance of the ELP at the Low Gloss ABS Unit either by the consent of the United States or by Court order.

iii. If Styron is required to commence performance of the ELP at the Low Gloss ABS Unit pursuant to Subparagraph 60.d.i, Styron shall have no liability for the stipulated penalties in Section VIII of this Decree; provided however, that the United States shall retain all other rights and remedies it may have against Styron to enforce the ELP.

e. Styron Transfer of Ownership and/or Operational Interest

i. Except as provided in Subparagraph 60.e.ii, by the later of: (i) thirty (30) days prior to Styron transferring its ownership or operational interest in the Low Gloss ABS Unit; or (ii) as soon as practical prior to such transfer, Styron will notify the prospective transferee of this Consent Decree and provide a copy. Styron shall not be relieved of its obligations in Paragraph 60 unless and until the transferee agrees in writing to assume the obligations in Paragraph 60, the United States agrees to the transferee's assumption (which agreement shall not be unreasonably withheld), and the United States, Styron, and the transferee file with this Court a Joint Notice of Assumption of those Obligations. It is expressly recognized that any such Joint Notice will also require the transferee to condition any future transfers on the assumption of these same obligations for the duration of this Consent Decree.

ii. Styron's obligations in Subparagraph 60.e.i do not apply to a corporate reorganization that results in the transfer of ownership or operation of the Low Gloss ABS Unit to an "Affiliate" of Styron. For purposes of this provision, "Affiliate" shall mean a person that directly, or indirectly through one or more intermediaries, controls, or is controlled by, or is under the common control with, the person specified.

61. Other Provisions. If and only if Styron is required to commence performance of the ELP pursuant to Subparagraph 60.d.i, then the following Sections of this Decree also shall apply as between the United States and Styron: III (Definitions); IX (Force Majeure); X (Dispute Resolution); XIV (Notices); XV (Modification); and XVII (Termination), but only with respect to the Low Gloss ABS Unit. This Court shall retain jurisdiction as set forth in Section XIV; this Decree shall have the same Effective Date as set forth in Section XV; and this Decree and shall remain a final judgment as set forth in Section XXII.

VIII. STIPULATED PENALTIES

62. Failure to Pay Civil Penalty. If Dow fails to pay any portion of the civil penalty required to be paid under Section IV of this Decree (Civil Penalty) when due, Dow shall pay a stipulated penalty of \$ 2500 per day for each day that the payment is late. Late payment of the civil penalty and any accrued stipulated penalties shall be made in accordance with Paragraph 10.

63. Failure to Meet all Other Consent Decree Obligations. Dow shall be liable for stipulated penalties to the United States for violations of this Consent Decree as specified in Table 2 below unless excused under Section IX (Force Majeure).

Table 2

Violation	Stipulated Penalty	
63.a. Failure to timely develop a Facility-Wide LDAR Document as required by Paragraph 14 or failure to timely update the Document on an annual basis if needed pursuant to Paragraph 14	<u>Period of noncompliance</u>	<u>Penalty per day late</u>
	1 - 15 days	\$ 300
	16 - 30 days	\$ 400
	31 days or more	\$ 500
63.b. Each failure to perform monitoring at the frequencies set forth in Paragraph 15 or, if applicable, Paragraphs 16 and 17	\$100 per component per missed monitoring event, not to exceed \$25,000 per month per Covered Process Unit	
63.c. Each failure to comply with Method 21 in performing LDAR monitoring, in violation of Paragraph 18	<u>Monitoring frequency for the component</u>	<u>Penalty per monitoring event per process unit</u>
	Every 2 years	\$ 25,000
	Annual	\$ 20,000
	Semi-Annual	\$ 15,000
	Quarterly	\$ 10,000
	Monthly	\$ 5,000
63.d. For each failure to use a monitoring device that is attached to a datalogger and for each failure, during each monitoring event, to directly electronically record the Screening Value, date, time, identification number of the	\$100 per failure per piece of equipment monitored	

monitoring instrument, and the identification of technician, in violation of these requirements of Paragraph 18			
63.e. Each failure to transfer monitoring data to an electronic database on at least a weekly basis, in violation of this requirement in Paragraph 18	\$150 per day for each day that the transfer is late		
63.f. Each failure to timely perform a first attempt at repair as required by Paragraph 21 or 23, unless not required to do so under Subparagraph 32.d.i or 38.c.i. For purposes of these stipulated penalties, the term “repair” includes the required remonitoring in Paragraph 22 after the repair attempt; the stipulated penalties in Subparagraph 63.h do not apply.	\$ 150 per day for each late day, not to exceed \$1500 per leak		
63.g. Each failure to timely perform a final attempt at repair as required by Paragraph 21, unless not required to do so under Subparagraph 32.d.i or 38.c.i. For purposes of these stipulated penalties, the term “repair” includes the required remonitoring in Paragraph 22 after the repair attempt; the stipulated penalties in Subparagraph 63.h do not apply.	Equipment <u>type</u>	Penalty per Component <u>per day late</u>	Not to <u>Exceed</u>
	Valves, connectors	\$ 300	\$ 37,500
	Pumps, agitators	\$1,200	\$ 150,000
63.h. Each failure to timely perform Repair Verification Monitoring as required by Paragraph 22 in circumstances where the first attempt to adjust, or otherwise alter, the piece of equipment to eliminate the leak was made within 5 days and the final attempt to adjust, or otherwise alter, the piece of equipment to eliminate the leak was made within 15 days	Equipment <u>type</u>	Penalty per Component <u>per day late</u>	Not to <u>Exceed</u>
	Valves, connectors	\$ 150	\$ 18,750
	Pumps, agitators	\$ 600	\$ 75,000
63.i. Each failure to undertake the drill-and-tap method as required by Paragraph 24	Period of <u>noncompliance</u>	Penalty per component per day <u>late</u>	
	Between 1 and 15 days	\$ 200	
	Between 16 and 30 days	\$ 350	
	Over 30 days	\$ 500 per day for each day over 30, not to exceed \$37,500	

63.j. Each failure to record the information required by Paragraph 25	\$ 100 per component per item of missed information		
63.k. Each improper placement of a piece of Covered Equipment on the DOR list (i.e., placing a piece of Covered Equipment on the DOR list even though it is feasible to repair it without a process unit shutdown)	Equipment <u>Type</u>	Penalty per component <u>per day on list</u>	Not to <u>exceed</u>
	Valve, connectors	\$300	\$75,000
	Pumps, Agitators	\$1200	\$300,000
63.l. Each failure to comply with the requirement in Subparagraph 27.a that a relevant unit supervisor or person of similar authority sign off on placing a piece of Covered Equipment on the DOR list	\$250 per piece of Covered Equipment		
63.m. Each failure to comply with the requirements of Subparagraph 27.c.(i)	Refer to the applicable stipulated penalties in Subparagraphs 63.f and 63.g		
63.n. Each failure to comply with the requirements of Subparagraph 27.c.(ii)	Refer to the applicable stipulated penalties in Subparagraphs 63.p – 63.u.		
63.o. Each failure to comply with the work practice standards in Paragraph 30	\$50 per violation per valve per day, not to exceed \$30,000 for all valves in a Covered Process Unit per quarter		
63.p. Each failure to install a Low-E Valve or a valve fitted with Low-E Packing when required to do so pursuant to Paragraph 31	\$ 20,000 per failure, except as provided in Paragraph 63A below		
63.q. Each failure, in violation of Subparagraph 32.b, to timely comply with the requirements relating to installing a Low-E Valve or Low-E Packing if a process unit shutdown is not required	\$500 per day per failure, not to exceed \$20,000, except as provided in Paragraph 63A below		
63.r. Each failure, in violation of Subparagraph 32.c, to install a Low-E Valve or Low-E Packing when required to do so during a Scheduled Maintenance	\$20,000 per failure, except as provided in Paragraph 63A below		
63.s. Each failure, in violation of Paragraph 37, to timely comply with the requirements relating to replacing or improving a connector for any new connector installation	\$10,000 per failure		

63.t. Each failure, in violation of Subparagraph 38.b., to timely comply with the requirements relating to replacing or improving a connector if the replacement or improvement does not require a process unit shutdown	\$250 per day per failure, not to exceed \$10,000 per failure								
63.u. Each failure, in violation of Subparagraph 38.b, to comply with the requirements relating to replacing or improving a connector if the replacement or improvement requires a process unit shutdown	\$10,000 per failure								
63.v. Each failure to add a piece of Covered Equipment to the LDAR program when required to do so pursuant to the evaluation required by Paragraph 41 (MOC)	\$ 300 per piece of Covered Equipment (plus an amount, if any, due under Paragraph 63.b for any missed monitoring event related to a component that should have been added to the LDAR Program but was not)								
63.w. Each failure to remove a piece of Covered Equipment from the LDAR program when required to do so pursuant to Paragraph 41	\$ 150 per failure per piece of Covered Equipment								
63.x. Each failure to timely develop a training protocol as required by Paragraph 42	\$ 50 per day late								
63.y. Each failure to perform initial, refresher, or new personnel training as required by Paragraph 42	\$ 1000 per person per month late								
63.z. Each failure of a monitoring technician to complete the certification required in Paragraph 43	\$100 per failure per technician								
63.aa. Each failure to perform any of the requirements relating to QA/QC in Paragraph 44	\$1000 per missed requirement per quarter								
63.bb. Each failure to conduct an LDAR audit in accordance with the schedule set forth in Paragraph 45.	<table> <tr> <th><u>Period of noncompliance</u></th><th><u>Penalty per day</u></th></tr> <tr> <td>1 – 15 days</td><td>\$300</td></tr> <tr> <td>16 – 30 days</td><td>\$400</td></tr> <tr> <td>31 days or more</td><td>\$500, not to exceed \$100,000 per audit</td></tr> </table>	<u>Period of noncompliance</u>	<u>Penalty per day</u>	1 – 15 days	\$300	16 – 30 days	\$400	31 days or more	\$500, not to exceed \$100,000 per audit
<u>Period of noncompliance</u>	<u>Penalty per day</u>								
1 – 15 days	\$300								
16 – 30 days	\$400								
31 days or more	\$500, not to exceed \$100,000 per audit								

63.cc. For the first, third, and fifth audits, each failure to use a third party; each use of a third party auditor that is not experienced in LDAR audits; and each use of Dow's regular LDAR contractor to conduct the third party audit	\$25,000 per audit	
63.dd. For the second and fourth LDAR audits, each audit that does not comply with the requirements in Paragraph 46	\$10,000 per audit	
63.ee. Except for the requirement to undertake Comparative Monitoring, each failure to substantially comply with the LDAR audit requirements in Paragraph 47	\$100,000 per audit	
63.ff. Each failure to substantially comply with the Comparative Monitoring requirements of Paragraph 48	\$50,000 per audit	
63.gg. Each failure to timely submit a Corrective Action Plan that substantially conforms to the requirements of Paragraph 50	<u>Period of noncompliance</u> 1 - 15 days 16 - 30 days 31 days or more Not to exceed \$100,000 per audit	<u>Penalty per day per violation</u> \$ 100 \$ 250 \$ 500
63.hh. Each failure to implement a corrective action within three months after the LDAR Audit Completion Date or pursuant to the schedule that Dow must propose pursuant to Subparagraph 50.b if the corrective action cannot be completed in three months or pursuant to an EPA-approved revised schedule pursuant to Subparagraph 50.d	<u>Period of noncompliance</u> 1 - 15 days 16 - 30 days 31 days or more Not to exceed \$200,000 per audit	<u>Penalty per day per violation</u> \$ 500 \$ 750 \$1000
63.ii. Each failure to timely submit a Certification of Compliance that substantially conforms to the requirements of Paragraph 51	<u>Period of noncompliance</u> 1 - 15 days 16 - 30 days 31 days or more Not to exceed \$75,000	<u>Penalty per day per violation</u> \$ 100 \$ 250 \$ 500
63.jj. Each failure to substantially comply with any recordkeeping, submission, or reporting requirement in Sections V and VI not specifically identified above in this Table 2.	<u>Period of noncompliance</u> 1 - 15 days 16 - 30 days 31 days or more	<u>Penalty per day per violation</u> \$ 100 \$ 250 \$ 500

63A. Stipulated Penalties in Lieu of those in Subparagraphs 63.p, 63.q, 63.r.

- a. For purposes of this Paragraph, the term “Non-Compliant Valve” means a valve that is either: (i) not a Low-E Valve; or (ii) not fitted with Low-E Packing. The term “Compliant Valve” means a valve that is either: (i) a Low-E Valve; or (ii) fitted with Low-E Packing.
- b. The stipulated penalties in Subparagraph 63A.c are to be used instead of those in Subparagraphs 63.p, 63.q, or 63.r when all of the following requirements are met:
 - i. Dow, and not a government agency, discovers the failure involved;
 - ii. Dow promptly reports the failure to EPA;
 - iii. In the report, Dow sets forth a schedule for promptly replacing the Non-Compliant Valve with a Compliant Valve; provided however, that Dow shall not be required to undertake an unscheduled shutdown of the affected Covered Process Unit in proposing the schedule unless Dow so chooses;
 - iv. Dow monitors the Non-Compliant Valve once a month from the time of its discovery until the valve is replaced with a Compliant Valve and no Screening Values above 100 ppm are recorded;
 - v. Dow replaces the Non-Compliant Valve with a Compliant Valve in accordance with the schedule set forth in 63A.b.iii; and
 - vi. Dow demonstrates that in good faith it intended to install a Compliant Valve but inadvertently installed a Non-Compliant Valve.
- c. The following stipulated penalties shall apply under the circumstances in Paragraph 63A:
 - i. In lieu of the penalty in Subparagraph 63.p, \$2000 per failure.
 - ii. In lieu of the penalty in Subparagraph 63.q, \$50 per day per failure, not to exceed \$2000
 - iii. In lieu of the penalty in Subparagraph 63.r, \$2000 per failure.

64. Stipulated Penalties at Low Gloss ABS Unit. If for any reason other than *force majeure*, Dow “Fails to Substantially Perform the ELP at the Low Gloss ABS Unit,” as defined in

Paragraph 60.c, and receives a “Final Notice” pursuant to Paragraph 60.c.ii, Dow shall be liable for a stipulated penalty of \$2,000,000. This penalty is applicable even though Styron or a successor company to Styron commences compliance with the obligations of Sections V and VI at the Low Gloss ABS Unit. After the date of the United States’ receipt of payment, or after the date that either Dow or Styron invokes dispute resolution claiming that Dow did not Fail to Substantially Perform the ELP at the Low Gloss ABS Unit, Dow no longer shall be liable for any stipulated penalties under Paragraphs 63 and 63A based upon obligations at the Low Gloss ABS Unit unless and until the resolution of any such dispute results in Dow recommencing performance of the ELP at the Low Gloss ABS Unit. In that case, stipulated penalties under Paragraph 63 again shall be applicable.

65. Waiver of Payment. The United States may, in its unreviewable discretion, reduce or waive payment of stipulated penalties otherwise due to it under this Consent Decree.

66. Demand for Stipulated Penalties. A written demand for the payment of stipulated penalties will identify the particular violation(s) to which the stipulated penalty relates; the stipulated penalty amount (as can be best estimated) that the United States is demanding for each violation; the calculation method underlying the demand; and the grounds upon which the demand is based. Prior to issuing a written demand for stipulated penalties, the United States may, in its unreviewable discretion, contact Dow for informal discussion of matters that the United States believes may merit stipulated penalties.

67. Stipulated Penalties’ Accrual. Stipulated penalties will begin to accrue on the day after performance is due or the day a violation occurs, whichever is applicable, and will continue to accrue until performance is satisfactorily completed or the violation ceases. Stipulated penalties shall accrue simultaneously for separate violations of this Consent Decree.

68. Stipulated Penalties Payment Due Date/Escrow Account for Paragraph 64

Stipulated Penalties. Except for stipulated penalties due under Paragraph 64, stipulated penalties shall be paid no later than sixty (60) days after receipt of a written demand by the United States unless the demand is disputed through compliance with the requirements of the dispute resolution provisions of this Decree. Stipulated penalties due under Paragraph 64 shall be paid no later than sixty (60) days after receipt of the Final Notice described in Paragraph 60.c.ii unless Dow or Styron invokes the dispute resolution provisions of this Decree to claim that Dow did not Fail to Substantially Perform the ELP at the Low Gloss ABS Unit. If either Dow or Styron invokes dispute resolution, Dow shall place \$2,000,000 into an interest-bearing, commercial escrow account within 30 days of the dispute resolution notice of either Dow or Styron, as applicable. Dow shall provide the United States with a copy of the escrow agreement and the statement showing the deposit of the disputed amount into the escrow account. If the resolution of the dispute results in Dow recommencing performance of the ELP at the Low Gloss ABS Unit, all funds in the escrow account shall be disbursed to Dow. If the resolution of the dispute results in Styron continuing to perform the ELP at the Low Gloss ABS Unit, all funds in the escrow account shall be disbursed to the United States.

69. Manner of Payment of Stipulated Penalties. Stipulated penalties owing to the United States of under \$10,000 will be paid by check and made payable to "U.S. Department of Justice," referencing DOJ Number 90-5-2-1-08935 and USAO File Number 2008V00788, and delivered to the U.S. Attorney's Office in the Eastern District of Michigan, 211 W. Fort St., Suite 2100, Detroit, MI 48226. Stipulated penalties owing to the United States of \$10,000 or more will be paid in the manner set forth in Section IV (Civil Penalty) of this Consent Decree. All transmittal correspondence shall state that the payment is for stipulated penalties, shall identify the

violations to which the payment relates, and shall include the same identifying information required by Paragraph 10.

70. Disputes over Stipulated Penalties. By no later than 60 days after receiving a demand for stipulated penalties, Dow may dispute liability for any or all stipulated penalties demanded by invoking the dispute resolution procedures of Section X. If Dow fails to pay stipulated penalties when due and does not prevail in dispute resolution, Dow shall be liable for interest at the rate specified in 28 U.S.C. § 1961, accruing as of the date payment became due.

71. No amount of the stipulated penalties paid by Dow shall be used to reduce its federal tax obligations.

72. Subject to the provisions of Section XII of this Consent Decree (Effect of Settlement/Reservation of Rights), the stipulated penalties provided for in this Decree shall be in addition to any other rights, remedies, or sanctions available to the United States for a violation of this Consent Decree or applicable law. In addition to injunctive relief or stipulated penalties, the United States may elect to seek mitigating emissions reductions equal to or greater than the excess amounts emitted if the violations result in excess emissions. Dow reserves the right to challenge the United States' exercise of this option. Where a violation of this Consent Decree is also a violation of the CAA or its implementing regulations, Dow shall be allowed a credit, for any stipulated penalties paid, against any statutory penalties imposed for such violation.

IX. FORCE MAJEURE

73. "Force Majeure," for purposes of this Consent Decree, is defined as any event beyond the control of Dow, its contractors, or any entity controlled by Dow that delays the performance of any obligation under this Consent Decree despite Dow's best efforts to fulfill the obligation. The requirement that Dow exercise "best efforts to fulfill the obligation" includes

using best efforts to anticipate any potential force majeure event and best efforts to address the effects of any such event: (a) as it is occurring; and (b) after it has occurred, to prevent or minimize any resulting delay.

74. "Force Majeure" does not include Dow's financial inability to perform any obligation under this Consent Decree. Unanticipated or increased costs or expenses associated with the performance of Dow's obligations under this Consent Decree shall not constitute circumstances beyond Dow's control nor serve as the basis for an extension of time under this Section IX. Force Majeure also does not include any impediment to performance caused in whole or in part by Dow's lack or limited ownership and/or lack or limited operation of the Low Glass ABS unit. An inability to perform the obligations of this Consent Decree at the Low Gloss ABS unit due to Dow's lack of or limited ownership and/or lack of or limited operation shall not constitute circumstances beyond Dow's control nor serve as the basis for an extension of time under this Section IX.

75. If any event occurs which causes or may cause a delay or impediment to performance in complying with any provision of this Consent Decree, Dow shall notify EPA in writing promptly but not later than fourteen business days after the time Dow first knew or should have known by the exercise of due diligence that the event might cause a delay. In the written notice, Dow shall specifically reference this Paragraph 75 of the Consent Decree and shall provide, to the extent such information is available at the time, an explanation and description of the reasons for the delay; the anticipated duration of the delay; all actions taken or to be taken to prevent or minimize the delay; a schedule for implementation of any measures to be taken to prevent or mitigate the delay or the effect of the delay; Dow's rationale for attributing such delay to a Force Majeure event; and a statement as to whether, in the opinion of Dow, such event may

cause or contribute to an endangerment to public health, welfare or the environment. Dow shall be deemed to know of any circumstance of which Dow, any entity controlled by Dow, or Dow's contractors knew or should have known. The written notice required by this Paragraph shall be effective upon the mailing of the same by overnight mail or by certified mail, return receipt requested, to EPA in the manner set forth in Section XIV (Notices).

76. Failure by Dow to materially comply with the notice requirements specified in Paragraph 75 shall preclude Dow from asserting any claim of Force Majeure with respect to the particular event involved, unless the United States, in its unreviewable discretion, permits Dow to assert a Force Majeure claim with respect to the particular event.

77. The United States shall respond in writing to Dow regarding Dow's claim of Force Majeure within 45 days of receipt of the notice required under Paragraph 75. After this initial response, the parties may confer.

78. If EPA initially or ultimately agrees that the delay or anticipated delay is attributable to a Force Majeure event, the time for performance of the obligations under this Consent Decree that are affected by the Force Majeure event will be extended by EPA for such time as is necessary to complete those obligations. An extension of the time for performance of the obligations affected by the Force Majeure event shall not, of itself, extend the time for performance of any other obligation. However, Dow may request that the time be extended for performance of any other obligation that is affected by the Force Majeure event. EPA will notify Dow in writing of the length of the extension, if any, for performance of the obligations affected by the Force Majeure event.

79. If EPA does not agree that the delay or anticipated delay has been or will be caused by a Force Majeure event, or if the parties fail to agree on the length of the delay attributable to the Force Majeure event, EPA so will notify Dow in writing of its final decision.

80. If Dow elects to invoke the dispute resolution procedures set forth in Section X (Dispute Resolution), it shall do so no later than 45 days after receipt of EPA's notice under Paragraph 77 (if the parties do not confer after that notice), or under Paragraph 79 (if the parties confer after the Paragraph 77 notice). In any such proceeding, Dow shall have the burden of demonstrating by a preponderance of the evidence that the delay or anticipated delay has been or will be caused by a Force Majeure event, that the duration of the delay or the extension sought was or will be warranted under the circumstances, that best efforts were exercised to avoid and mitigate the effects of the delay, and that Dow materially complied with the requirements of Paragraphs 73 and 75. If Dow carries this burden, the delay at issue shall be deemed not to be a violation by Dow of the affected obligation of this Consent Decree identified to EPA and the Court.

X. DISPUTE RESOLUTION

81. Unless otherwise expressly provided for in this Consent Decree, the dispute resolution procedures of this Section shall be the exclusive mechanism to resolve disputes arising under or with respect to this Consent Decree.

82. Informal Dispute Resolution. The first stage of dispute resolution shall consist of informal negotiations. The dispute shall be considered to have arisen when one Party sends the other Party a written Notice of Dispute. Such Notice of Dispute shall state clearly the matter in dispute. The period of informal negotiations shall not exceed 60 days after the Notice of Dispute, unless that period is modified by written agreement. If the Parties cannot resolve the dispute by informal negotiations, then the position advanced by the United States shall be considered binding

unless within 45 days after the conclusion of the informal negotiation period, Dow invokes formal dispute resolution procedures set forth below.

83. Formal Dispute Resolution. Dow shall invoke formal dispute resolution procedures, within the time period provided in the preceding Paragraph, by serving on the United States a written Statement of Position regarding the matter in dispute. The Statement of Position shall include, but need not be limited to, any factual data, analysis, or opinion supporting Dow's position and any supporting documentation relied upon by Dow. Dow and the United States may hold additional discussions, which may, in the unreviewable discretion of each party, include higher-level representatives of one or both parties.

84. The United States shall serve its Statement of Position within 45 days of receipt of Dow's Statement of Position. The United States' Statement of Position shall include, but need not be limited to, any factual data, analysis, or opinion supporting that position and any supporting documentation relied upon by the United States. The United States' Statement of Position shall be binding on Dow unless Dow files a motion for judicial review of the dispute in accordance with the following Paragraph.

85. Dow may seek judicial review of the dispute by filing with the Court and serving on the United States, in accordance with Section XIV of this Consent Decree (Notices), a motion requesting judicial resolution of the dispute. The motion must be filed within 60 days of receipt of the United States' Statement of Position pursuant to the preceding Paragraph. The motion shall contain a written statement of Dow's position on the matter in dispute, including any supporting factual data, analysis, opinion, or documentation, and shall set forth the relief requested and any schedule within which the dispute must be resolved for orderly implementation of the Consent Decree.

86. The United States shall respond to Dow's motion within the time period allowed by the Local Rules of this Court for responses to dispositive motions. Dow may file a reply memorandum, to the extent permitted by the Local Rules.

87. In a formal dispute resolution proceeding under this Section, Dow shall bear the burden of demonstrating that its position complies with this Consent Decree and the CAA and that it is entitled to relief under applicable principles of law. The United States reserves the right to argue that its position is reviewable only on the administrative record and must be upheld unless arbitrary and capricious or otherwise not in accordance with law, and Dow reserves the right to argue to the contrary.

88. [Reserved]

89. The invocation of dispute resolution procedures under this Section shall not, by itself, extend, postpone, or affect in any way any obligation of Dow under this Consent Decree, unless and until final resolution of the dispute so provides. Stipulated penalties with respect to the disputed matter shall continue to accrue from the first day of noncompliance, but payment shall be stayed pending resolution of the dispute. If Dow does not prevail on the disputed issue, stipulated penalties shall be assessed and paid as provided in Section VIII (Stipulated Penalties).

XI. INFORMATION COLLECTION AND RETENTION

90. The United States and its representatives and employees shall have the right of entry into the Facility, at all reasonable times, upon presentation of credentials and any other documentation required by law, to:

- a. monitor the progress of activities required under this Consent Decree;
- b. verify any data or information submitted to the United States in accordance with the terms of this Consent Decree;

- c. obtain documentary evidence, including photographs and similar data, relevant to compliance with the terms of this Consent Decree; and
- d. assess Dow's compliance with this Consent Decree.

91. Until one year after termination of this Consent Decree, Dow shall retain, and shall instruct its contractors and agents to preserve, all documents, records, or other information, regardless of storage medium (*e.g.*, paper or electronic) in its or its contractors' or agents' possession or control, or that come into its or its contractors' or agents' possession or control, and that directly relate to Dow's performance of its obligations under this Consent Decree. This information-retention requirement shall apply regardless of any contrary corporate or institutional policies or procedures. At any time during this information-retention period, the United States may request copies of any documents, records, or other information required to be maintained under this Paragraph.

92. Except for emissions data, including Screening Values, Dow may also assert that information required to be provided under this Section is protected as Confidential Business Information ("CBI") under 40 C.F.R. Part 2. As to any information that Dow seeks to protect as CBI, Dow shall follow the procedures set forth in 40 C.F.R. Part 2, where applicable. Except for emissions data, including Screening Values, Dow reserves the right to assert any legal privilege and the United States reserves the right to challenge any claim of privilege.

93. This Consent Decree in no way limits or affects any right of entry and inspection, or any right to obtain information, held by the United States pursuant to applicable federal laws, regulations, or permits, nor does it limit or affect any duty or obligation of Dow to maintain documents, records, or other information imposed by applicable federal or state laws, regulations, or permits.

XII. EFFECT OF SETTLEMENT/RESERVATION OF RIGHTS

94. This Consent Decree resolves the civil claims of the United States for the violations alleged in the Complaint filed in this action and the Findings and Notice of Violations from the date those claims accrued through the Date of Lodging.

95. The United States reserves all legal and equitable remedies available to enforce the provisions of this Consent Decree, except as expressly stated in Paragraph 94. This Consent Decree shall not be construed to limit the rights of the United States to obtain penalties or injunctive relief under the CAA, CWA, RCRA or implementing regulations, or under other federal laws, regulations, or permit conditions, except as expressly specified in Paragraph 94. The United States further reserves all legal and equitable remedies to address any situation that may present an imminent and substantial endangerment to the public health or welfare or the environment arising at, or posed by, the Facility, whether related to the violations addressed in this Consent Decree or otherwise.

96. In any subsequent administrative or judicial proceeding initiated by the United States for injunctive relief, civil penalties, or other appropriate relief relating to the Facility, Dow shall not assert, and may not maintain, any defense or claim based upon the principles of waiver, res judicata, collateral estoppel, issue preclusion, claim preclusion, claim-splitting, or other defenses based upon any contention that the claims raised by the United States in the subsequent proceeding were or should have been brought in the instant case, except with respect to claims that have been specifically resolved pursuant to Paragraph 94 of this Section.

97. This Consent Decree is not a permit, or a modification of any permit, under any federal, state, or local laws or regulations. Dow is responsible for achieving and maintaining compliance with all applicable federal, state, and local laws, regulations, and permits and Dow's

compliance with this Consent Decree shall be no defense to any action commenced pursuant to any such laws, regulations, or permits. The United States does not, by its consent to the entry of this Consent Decree, warrant or aver in any manner that Dow's compliance with any aspect of this Consent Decree will result in compliance with provisions of the CAA, or with any other provisions of federal, state, or local laws, regulations, or permits.

98. Except as expressly provided in Section VII with respect to Styron, this Consent Decree does not limit or affect the rights of Dow or of the United States against any third parties (including Styron), not party to this Consent Decree, nor does it limit the rights of third parties (including Styron), not party to this Consent Decree, against Dow, except as otherwise provided by law.

99. Except as expressly provided in Section VII with respect to Styron, this Consent Decree shall not be construed to create rights in, or grant any cause of action to, any third party (including Styron) that is not a Party to this Consent Decree.

XIII. COSTS

100. The Parties shall bear their own costs of this action, including attorneys' fees, except that the United States shall be entitled to collect the costs (including attorneys' fees) against Dow incurred in any action necessary to enforce this Consent Decree or to collect any portion of the civil penalty or any stipulated penalties due but not paid by Dow.

XIV. NOTICES

101. Unless otherwise specified herein, whenever notifications, submissions, or communications are required by this Consent Decree, they shall be made in writing and addressed to the persons set forth below. Submission of hard copies is required and shall be sufficient to

comply with the notice requirements of this Consent Decree. The email addresses listed below are to permit the submission of courtesy copies.

Notice or submission to the United States:

Chief, Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
Box 7611 Ben Franklin Station
Washington, DC 20044-7611
Re: DOJ No. 90-5-2-1-08935

Notice or submission to EPA:

Air and Radiation Division
EPA Region 5
77 W. Jackson Blvd. (AE-17J)
Chicago, IL 60604
Attn: Compliance Tracker

and

Office of Regional Counsel
EPA Region 5
77 West Jackson Blvd. (C-14J)
Chicago, IL 60604

For courtesy purposes only, electronic copies to:

loukeris.constantinos@epa.gov
liszewski.christine@epa.gov

Notice or submission to Dow:

Site Leader
The Dow Chemical Company
1790 Building
Washington Street
Midland, Michigan 48674

and

Toby Alaska Threet
Counsel
The Dow Chemical Company
1790 Building
Washington Street
Midland, Michigan 48674

Notice or submission to Styron:

Jason N. Scott
Styron Manufacturing Site Leader/Production Leader
Styron LLC
Michigan Operations
1350/464 Buildings
Midland, MI 48667
(989) 638-9675

Jennifer Berke Levin
Associate General Counsel
Environmental Health & Safety
Styron LLC
1000 Chesterbrook Blvd.
Berwyn, PA 19312

Any Party may, by written notice to the other Party, change its designated notice recipient(s) or notice address(es) provided above. Notices submitted pursuant to this Section shall be deemed submitted upon mailing, unless otherwise provided in this Consent Decree or by mutual agreement of the Parties in writing.

XV. EFFECTIVE DATE

102. The Effective Date of this Consent Decree shall be the date upon which this Consent Decree is entered by the Court or a motion to enter the Consent Decree is granted, whichever occurs first, as recorded on the Court's docket.

XVI. RETENTION OF JURISDICTION

103. The Court shall retain jurisdiction over this case until termination of this Consent Decree for the purposes of resolving disputes arising under this Decree, entering orders modifying this Decree, or effectuating or enforcing compliance with the terms of this Decree.

XVII. MODIFICATION

104. The terms of this Consent Decree may be modified only by a subsequent written agreement signed by the United States and Dow. Where the modification constitutes a material change to any term of this Consent Decree, it shall be effective only upon approval by the Court.

105. Any disputes concerning modification of this Decree shall be resolved pursuant to Section X of this Decree (Dispute Resolution); provided, however, that instead of the burden of proof as provided by Paragraph 87, the Party seeking the modification bears the burden of demonstrating that it is entitled to the requested modification in accordance with Federal Rule of Civil Procedure 60(b).

XVIII. TERMINATION

106. By no sooner than after completion of the fifth LDAR audit required pursuant to Subsection V.K of this Decree, Dow may send the United States a Request for Termination of this Consent Decree. In the Request for Termination, Dow must demonstrate that it has maintained satisfactory compliance with this Consent Decree for the two year period immediately preceding the Request for Termination. In no event may this Consent Decree be terminated if the civil penalty and/or any outstanding stipulated penalties have not been paid. The Request for Termination shall include all necessary supporting documentation.

107. Following receipt by the United States of Dow's Request for Termination, the Parties shall confer informally concerning the Request and any disagreement that the Parties may

have as to whether Dow satisfactorily has complied with the requirements for termination. If the United States agrees that the Decree may be terminated, the Parties shall submit, for the Court's approval, a joint stipulation terminating the Decree.

108. If the United States does not agree that the Decree may be terminated, Dow may invoke dispute resolution under Section X of this Decree. However, Dow shall not invoke dispute resolution for any dispute regarding termination until 60 days after sending its Request for Termination.

XIX. PUBLIC PARTICIPATION

109. This Consent Decree shall be lodged with the Court for a period of not less than 30 days for public notice and comment in accordance with 28 C.F.R. § 50.7. The United States reserves the right to withdraw or withhold its consent if the comments regarding the Consent Decree disclose facts or considerations indicating that the Consent Decree is inappropriate, improper, or inadequate. Dow consents to entry of this Consent Decree without further notice.

XX. SIGNATORIES/SERVICE

110. The undersigned representatives of Dow, Styron, and the Assistant Attorney General for the Environment and Natural Resources Division of the Department of Justice (or his or her designee) each certify that he or she is fully authorized to enter into the terms and conditions of this Consent Decree and to execute and legally bind the Party he or she represents to this document.

111. This Consent Decree may be signed in counterparts, and its validity shall not be challenged on that basis.

112. Dow agrees not to oppose entry of this Consent Decree by the Court or to challenge any provision of the Decree unless the United States has notified Dow in writing that it no longer supports entry of the Decree.

113. Dow agrees to accept service of process by mail with respect to all matters arising under or relating to this Consent Decree and to waive the formal service requirements set forth in Rules 4 and 5 of the Federal Rules of Civil Procedure and any applicable Local Rules of this Court including, but not limited to, service of a summons.

XXI. INTEGRATION

114. This Consent Decree and its Appendix constitute the final, complete, and exclusive agreement and understanding between the Parties with respect to the settlement embodied in this Consent Decree and its Appendix and supersede all prior agreements and understandings, whether oral or written, concerning the settlement embodied herein. No other document, except for any plans or other deliverables that are submitted and approved pursuant to this Decree, nor any representation, inducement, agreement, understanding, or promise, constitutes any part of this Decree or the settlement it represents, and no such extrinsic document or statement of any kind shall be used in construing the terms of this Decree.

XXII. FINAL JUDGMENT

115. Upon approval and entry of this Consent Decree by the Court, this Consent Decree shall constitute a final judgment of the Court in this action as to the United States and Dow. The Court finds that there is no just reason for delay and therefore enters this judgment as a final judgment under Fed. R. Civ. P. 54 and 58.

s/Thomas L. Ludington
THOMAS L. LUDINGTON
United States District Judge

Dated: November 23, 2011

PROOF OF SERVICE

The undersigned certifies that a copy of the foregoing order was served upon each attorney or party of record herein by electronic means or first class U.S. mail on November 23, 2011.

s/Tracy A. Jacobs
TRACY A. JACOBS

We hereby consent to the entry of the Consent Decree in the matter of United States v. The Dow Chemical Company, subject to public notice and comment.

FOR THE UNITED STATES OF AMERICA

s/ with consent of Ignacia S. Moreno
IGNACIA S. MORENO
Assistant Attorney General
Environment and Natural Resources Division
United States Department of Justice

s/ Annette M. Lang
ANNETTE M. LANG
Environmental Enforcement Section
Environment and Natural Resources Division
P.O. Box 7611
Washington, D.C. 20044-7611
(202) 514-4213
(202) 616-6584 (fax)
annette.lang@usdoj.gov

BARBARA L. MCQUADE
United States Attorney
Eastern District of Michigan

By: s/ with consent of Peter A. Caplan
PETER A. CAPLAN
Assistant United States Attorney
Eastern District of Michigan
211 W. Fort St., Suite 2001
Detroit, MI 48226
(313) 226-9784
P-30643
peter.caplan@usdoj.gov

We hereby consent to the entry of the Consent Decree in the matter of United States v. The Dow Chemical Company, subject to public notice and comment.

FOR THE UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY

s/ with consent of Cynthia Giles
Assistant Administrator
Office of Enforcement and Compliance Assurance
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

s/ with consent of Adam M. Kushner
ADAM M. KUSHNER, Director
Office of Civil Enforcement
Office of Enforcement and Compliance Assurance
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

We hereby consent to the entry of the Consent Decree in the matter of United States v. The Dow Chemical Company, subject to public notice and comment.

FOR THE UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY

s/ with consent of Robert A. Kaplan
ROBERT A. KAPLAN
Regional Counsel
U.S. Environmental Protection Agency
Region 5
Chicago, IL

s/ with consent of Susan Hedman
SUSAN HEDMAN
Regional Administrator
U.S. Environmental Protection Agency
Region 5
Chicago, IL

We hereby consent to the entry of the Consent Decree in the matter of United States v. The Dow Chemical Company.

FOR THE DOW CHEMICAL COMPANY

s/ with consent of Earl Shipp

EARL SHIPP

Vice President

Dow Chemical Michigan Operations

The Dow Chemical Company

1790 Building

Washington Street

Midland, Michigan 48674

By executing this document, we hereby consent only to Section VII of this Consent Decree in the matter of United States v. The Dow Chemical Company.

FOR STYRON LLP

s/ with consent of Jason M. Scott

JASON N. SCOTT

Styron Manufacturing Site Leader/Production Leader

Styron LLC

Michigan Operations

1350/464 Buildings

Midland, MI 48667

(989) 638-9675

APPENDIX A

APPENDIX A

Factors to be Considered and Procedures to be Followed To Claim Commercial Unavailability

This Appendix outlines the factors to be taken into consideration and the procedures to be followed for Dow to assert that a Low-E Valve or Low-E Packing is “commercially unavailable” pursuant to Paragraph 34 of the Consent Decree.

I. FACTORS

A. Nothing in this Consent Decree or this Appendix requires Dow to utilize any valve or packing that is not suitable for its intended use in a Covered Process Unit.

B. The following factors are relevant in determining whether a Low-E Valve or Low-E Packing is commercially available to replace or repack an existing valve:

1. Valve type (*e.g.*, ball, gate, butterfly, needle) (this ELP does not require consideration of a different type of valve than the type that is being replaced)
2. Nominal valve size (*e.g.*, 2 inches, 4 inches)
3. Compatibility of materials of construction with process chemistry
4. Valve operating conditions (*e.g.*, temperature, pressure)
5. Service life
6. Packing friction (*e.g.*, impact on operability of valve)
7. Whether the valve is part of a packaged system or not
8. Retrofit requirements (*e.g.*, re-piping or space limitations)
9. Other relevant considerations

C. The following factors may also be relevant, depending upon the process unit or equipment where the valve is located:

10. In cases where the valve is a component of equipment that Dow is licensing or leasing from a third party, valve or valve packing specifications identified by the lessor or licensor of the equipment of which the valve is a component
11. Valve or valve packing vendor or manufacturer recommendations for the relevant process unit components.

II. PROCEDURES THAT DOW SHALL FOLLOW TO ASSERT COMMERCIAL UNAVAILABILITY

A. Dow shall comply with the following procedures if it seeks to assert commercial unavailability under Paragraph 34 of the Consent Decree:

1. Dow must contact a reasonable number of vendors of valves or valve packing that Dow, in good faith, believes may have valves or valve packing suitable for the intended use taking into account the relevant factors listed in Section I above.

- a. For purposes of this Consent Decree, a reasonable number of vendors presumptively shall mean no less than three.
- b. If fewer than three vendors are contacted, the determination of whether such fewer number is reasonable shall be based on Factors (10) and (11) or on a demonstration that fewer than three vendors offer valves or valve packing considering Factors (1) – (9).

2. Dow shall obtain a written representation from each vendor, or equivalent documentation, that a particular valve or valve packing is not available as “Low-Emissions” from that vendor for the intended conditions or use.

a. “Equivalent documentation” may include e-mail or other correspondence or data showing that a valve or valve packing suitable for the intended use does not meet the definition of “Low-E Valve” or “Low-E Packing” in the Consent Decree or that the valve or packing is not suitable for the intended use.

b. If the vendor does not respond or refuses to provide documentation, “equivalent documentation” may consist of records of Dow’s attempts to obtain a response from the vendor.

3. Each Compliance Status Report required by Section VI of the Consent Decree shall identify each valve that Dow otherwise was required to replace or repack, but for which, during the time period covered by the Report, Dow determined that a Low-E Valve and/or Low-E Packing was not commercially-available. Dow shall provide a complete explanation of the basis for its claim of commercial unavailability, including, as an attachment to the Compliance Status Report, all relevant documentation. This report shall be valid for a period of twelve months from the date of the report for the specific valve involved and all other similar valves, taking into account the factors listed in Part I.

III. OPTIONAL EPA REVIEW OF DOW'S ASSERTION OF COMMERCIAL UNAVAILABILITY

A. At its option, EPA may review an assertion by Dow of commercial unavailability. If EPA disagrees with Dow's assertion, EPA shall notify Dow in writing, specifying the Low-E Valve or Low-E Packing that EPA believes to be commercially available and the basis for its view that such valve or packing is appropriate taking into consideration the Factors described in Part I. After Dow receives EPA's notice, the following shall apply:

1. Dow shall not be required to retrofit the valve or valve packing for which it asserted commercial unavailability (unless Dow is otherwise required to do so pursuant to another provision of the Consent Decree).

2. Dow shall be on notice that EPA will not accept a future assertion of commercial unavailability for: (i) the valve or packing that was the subject of the unavailability assertion; and/or (ii) a valve or packing that is similar to the subject assertion, taking into account the Factors described in Part I.

3. If Dow disagrees with EPA's notification, Dow and EPA shall informally discuss the basis for the claim of commercial unavailability. EPA may thereafter revise its determination, if necessary.

4. If Dow makes a subsequent commercial unavailability claim for the same or similar valve or packing that EPA previously rejected, and the subsequent claim also is rejected by EPA, Dow shall retrofit the valve or packing with the commercially available valve or packing unless Dow is successful under Subsection III.B below.

B. Any disputes under this Appendix first shall be subject to informal discussions between Dow and EPA for a period not to exceed 60 days before Dow shall be required to invoke the Dispute Resolution provisions of Section X of the Consent Decree. Thereafter, if the dispute remains, Dow shall invoke the Dispute Resolution provisions.